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EDUCATION.*

The Presidential Address of 1906.

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Detroit.

Members of the State Medical Society:—

It has seemed to me that no subject better deserves our attention than that of education.

We are carried along by the great currents of social evolution. Today the trend of all things, all activities, is toward concentration of power—toward co-operation of many men for common purposes. A medical education today means the power of large capital; none but schools wealthy enough to provide many and expensive facilities can long survive. The steady increase in requirements for graduation, and particularly for State registration, is bringing it about that young men cannot afford to attend poorly equipped schools. The poorly equipped school is doomed.

Medical education also means today not only abundant and varied clinical instruction, but that form of clinical instruction in which the student comes in close and personal contact with the pa-

tient; has a personal part in the clinical diagnosis and treatment.

This is quite a different thing from viewing a patient in the pit of an amphitheatre from far away benches.

Such clinical teaching means that the teaching staff of a medical college must be greatly increased; many men must co-operate to teach clinical medicine, not alone in class rooms, but particularly in hospital wards and dispensary offices. Small groups of students, many teachers and actual daily bedside study of the sick. The whole scheme of college training must grow.

One teacher of physiology can give to a large class little more than a re-statement of the facts in the text book. Indeed the text book statement is often more exact and complete. The thing cannot be otherwise. No one man can adequately cover the field of physiology. There should be not one, but several teachers of physiology.

The same holds true of pathology, of surgery, of practice.

To make the growth produce the best results, the State examination must be-

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come the objective point of a student's work, and the examinations shall go beyond tests of memory, and require proof that the students have been taught to think,—to apply the facts learned in the laboratories, the facts learned from lectures and reading, to the conditions of the sick.

It may be said that such a program is difficult, but the practice of medicine is difficult. It is high time that incompetent men,—dull men, blunderers, are kept from entering a profession which has no place for them, where incompetency and blundering are terribly disastrous.

In medical teaching, this is well worth considering.

So great have been the advances in the study of pathology and physiology that we are apt to forget the final use of these advances. Until the developments of pathology and physiology are joined to clinical medicine and surgery they are useless.

In College instruction and in medical societies and medical journals, this fact is too often forgotten. There must come, and there should come now, a reaction so that the great teacher should be a great clinician.

There is need of a revival of clinical observation,—careful, exact, comprehensive.

The great clinicians of forty years ago were handicapped by lack of definite knowledge of pathology and a meager knowledge of physiology, yet they were marvelous teachers, and a man today cannot do better than to read some of the old clinicians. In our study of modern pathology we have done well, but with what has been done there can well come greater clinicians than the old masters.

Such a school as I have portrayed, we

do not yet possess in Michigan, but no medical man in the State can fail to be interested in the proposed amalgamation of the University School and the Detroit College of Medicine.

The University School today ranks with the highest in all that pertains to laboratory training, in high standards well lived up to, but it is not the great school it may and should become and that on grounds of necessarily limited clinical opportunities.

Put the clinical possibilities of Detroit at her service and she will stand in the first rank as a great College.

I have spoken about the evolution of the great medical school as affording necessary instruction to the student. There is a greater side to this growth of a great school.

A great school will bring to the top the great teachers. There are many Professors who cannot teach; many a man may have knowledge, yet fail utterly in imparting it. The great school will furnish a field for the great teacher. From the ranks of many instructors will come up the men whose knowledge forms the basis for a fine enthusiasm, men who bring to their students an inspiration.

So long as the student had in mind his diploma only, so long the college curriculum was all sufficient,—so long the College Professor was omnipotent. Now, when the student has in mind the State examination he becomes greatly interested in results of teaching. The Professor is no longer to be worshipped—Can he teach? From this it is but a step to extra-mural teaching—a step sure to come in no long time. Not all the good teachers will be or can be upon a College staff. When a student is seeking results, extra-mural teachers may

rival men on the College staff, and it ought to be possible for the student to make choice.

Once let this be true and the great school will know where to find great teachers and will, of necessity, take them in. Not until a College Professor must win his spurs will we have the men we want and the men we need. And with extra-mural teachers the man who has won his spurs must still ride and contend.

Then a great school will be a center of fine enthusiasms, and around the school will develop ambitious men.

Have I presented to you a picture of ambition—of enthusiasm which does not touch you? All men cannot become College Professors, or gather within the walls of a Medical School. Is it therefore, far away from you? By no means.

Think of this: All these College teachers are concerned in a slow, laborious process of making young Doctors out of raw material. Fine young fellows, many of them, but raw material none the less. Some students ride through College on ponies from start to finish,—many are half way honest and only practice the fraud of ponies on occasions. How can a teacher feel enthusiasm in teaching such men? The honest,—the brightest and best of them are unfolding, but by no means ripe. Time and practice and perpetual study make fine Doctors out of many of them after they leave College.

It may be that you cannot teach Medical students, but you can teach Medical practitioners. You can do extra-mural teaching in your local medical societies, and you shall have gathered about you men trained in life's school—men who already know how to judge, students who have contempt for quiz compends, who demand the best you have in you and can

appreciate it when they get it.

Has a College Professor a spur to study—a growing ambition? The man who has the stirring of ambition within him can find in regular attendance at Medical Societies such a spur as a College Professor does not have.

Notice this, that your live College Professor is the Medical Society man—he wants an audience of men who know.

Medical education is a thing, vastly greater than College and text book. We do not always stop and think. Take one of the leading Medical Journals; study its table of contents,—it is a most striking change. All the great problems of every branch of medical science and art are being taught. In five years a text book is antiquated, often useless. The real teaching is being done, not by text books, but by our fine medical journals. The man who keeps a lot of finely bound text books of varying ancient dates may impress the ignorant, but the man who intends to become a force in his community and among his fellows is the man who reads, marks, and inwardly digests good medical journals, and uses text books and monographs to help him systematize in his own mind what his journals tell him.

And these journals reproduce what is being first brought out in Medical Societies.

Has a man ambition to teach, let him teach in his Medical Societies. Has a man ambition to learn, let him attend his medical societies. It only takes five years for a text book to become antique. It takes less than five years to make a back number out of the medical man who neglects his Medical Society and his Medical Journals. In our Wayne County Society, an older doctor, long a stranger to our meetings, has lately been on hand

regularly. I asked him why? He said: "There have come into the Society lately a lot of fine young men, well trained. They have changed things. I cannot afford to stay away."

These young men mean much. In localities where it has been hard to organize County Societies, I have urged the men who have tried to start, or keep up a Society, "get the *young* men in—never mind the older men just now,—get the young men." We older men must keep up our society interests, must teach, must read, must study, all because of those young men. We cannot afford not to.

One more phase of medical education:

If we succeed in building up a great medical school, it must be on the basis of the free use of hospitals in clinical ways. The hospital is the training school. Now, medical men in many smaller towns have by no means developed the hospital idea as it can be done and should be done. The word "hospital" seems to suggest a large, expensive building. It need not be so. A dwelling house, with good sanitary conditions, can be made into a very servicable hospital at moderate expense, and many a County Society could do excellent work for its own members and for the community by establishing a hospital, not necessarily large, but adequate to the means of the community.

If it be true that, in a large city, physicians and surgeons find that they can secure so much better results by putting many of their patients in hospitals, it is equally true that people in the smaller cities and towns need just as good care as people in a large city.

I have spoken about extra-mural teaching as being something open to every ambitious and progressive man. The es-

tablishment of numerous small hospitals is only another step in the same direction. I am well aware of the objections that will at once spring up of professional jealousies, of expenses, and of the labor of administering a hospital; yet I believe there is going on such an evolution in the medical life that the County Societies, if they take hold of this matter, can exert an influence upon the community so as to secure the necessary financial means to carry on such work. The result would, I think, prove of great benefit both to the community and to the physicians.

A good hospital in a small town would stimulate every physician within its influence to more accurate diagnosis, and to more up to date practice. I believe that it would contribute greatly to good fellowship.

Such a small hospital conducted, not by a clique, but by a County Society, would do away with many petty jealousies;—would be common ground where men could meet, compare experiences, consult; many laboratory aids to diagnosis which cannot be had in small places would be at the service of all.

At present the charity patient is a burden which the physician carries alone. It is time that the community carried part of the burden—In supporting a small hospital it would do so.

So far, I have spoken of medical education purely. I cannot forbear urging upon your attention a phase of education which must be carried out by medical men, if at all. I refer to the education of the public in regard to the prophylaxis of the venereal diseases. You will receive a report of the standing committee on this subject, as you have done for two years past. The work of the committee cannot be too highly commended.

My plea is that the members of this Society individually, and that the County Societies carry out the suggestions made by the committee, and begin the much needed work of educating the public.

Under the auspices of the Committee a public meeting was held in Detroit, which was attended by principals of schools, lawyers, ministers, newspaper men and others. There could be no question of the interest awakened by the meeting, and the expression of surprise and astonishment on the part of some of the leading men in the community at the facts brought out by the committee, was remarkable evidence of the need of public education. These were men looked upon as leaders in thought of the community, considered as thoroughly intelligent men, who learned of the facts with amazement.

If these revelations so surprise men of this class, how great is the need for a universal education on these lines! What was done in Detroit on this occasion ought to be done within a year from now in every County in the State, in every town, and it ought to be done much oftener than once a year. I realize that it requires courage, force, persistence, to inaugurate and carry on this movement; but the curse of venereal diseases is so great, the ravages are so disastrous, that men who know have no valid excuse for keeping silence.

We pride ourselves on the results of the re-organization of the medical profession. If these results are counted simply in an increased membership and attendance at County, District and State Society meetings, then the re-organization will fall far short of its actual possibilities.

When we figure up results we ought to figure up the results in terms of suc-

cess in bettering human conditions.

Medical men must do the work which medical men alone can do. It is not our province to carry on the reforms in social life, which can as well be done by all citizens alike, but there are many things which, if done at all, must be done by the medical men. The influence of school life and school requirements upon the health of pupils, the improvement of sanitary conditions of schools, prisons, factories; the problems of health which are bound up in the labor of children and women in factories; the influence of defective mental training, in the increase of insanity;—all these are problems which depend upon medical men for their solution.

The field of activity for the County Societies is opening up in large ways, and it will be a proud day for the profession when County and District Societies report to the State Society, not only increase of membership and attendance, a growth of fraternal feeling, but practical results in solving such problems as I have here suggested.

In connection with this subject of higher standards for medical education, the American Medical Association has formed a council on medical education. I venture to suggest that this Society appoint a Standing Committee on medical education to co-operate with the council of the American Medical Association.

Members of the State Medical Society:

When a man sums up the things which make life truly worth while, he should first count up the number of his friends, and who they be.

If those friends are men and women,

who have knowledge, so that they can judge him well, then he is fortunate indeed.

So I count myself happy, in your good will, and am most grateful for the honor

you did me, in electing me to this high office.

May I not hope that, as I shall continue grateful all my years, so I may still be richer, by your friendship continuing.

THE POPULAR SYNTHETIC REMEDIES, THEIR USE AND MISUSE*

J. O. SCHLOTTERBECK, PH. D.,

(Dean of the School of Pharmacy, University of Michigan.)

With the increasing employment by the medical profession of proprietary preparations of various classes, there appears to be a corresponding laxity in the use of the word "synthetic." It is not uncommon to hear the word used indiscriminately in connection with true synthetics, fictitious synthetics, decomposition products, and even mixtures pure and simple. This is not surprising when we consider that some knowledge of the chemistry of a compound is essential to a proper classification, and further that the terminology of the majority of the army of new remedies is anything but suggestive of composition. In fact, it may be said that many of the titles appended to new remedies have for their chief recommendation brevity and euphony, in addition to an utter lack of significance. Again, owing to the relatively slight attention given to the subject of organic chemistry in medical colleges in the past as well as at present, many physicians are not in a position to distinguish between classes of chemical remedies, even when a scientific or semi-scientific nomenclature is employed. A

very prominent physician recently expressed his belief that the status and efficiency of the medical profession would be largely enhanced if some of the spectacular courses of present day medical curricula were replaced by more thorough training in the chemistry, pharmacology and prescription of definite chemical compounds. It is needless to say, is scarcely open to argument in fact, that in this age of synthetic remedies the physician should have at his command a discriminating knowledge of organic chemistry.

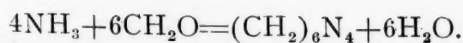
But what is a synthetic compound? Let us compare the preparation of a synthetic with the construction of a building, a rather homely illustration, but one which will answer the purpose. Edifices of widely differing architecture are constructed by bringing together not in a heterogeneous mixture, but according to definite plans, a number of structural units more or less different in character. When the buildings are finally completed we have new structures entirely unlike the units of which they were built. They are comparable with the synthetic compounds prepared in the laboratory. Now, if an edifice be demolished and resolved into the original structural units or ele-

*Read before the Wayne County Medical Society, April 16, 1906.

ments of which it was composed, these units could be compared with the decomposition products obtained when a compound is subjected to analysis. Synthetics are made by the established chemical process called synthesis, which is the uniting of simple compounds or elements to produce complex ones. Synthesis is therefore a constructive process, the opposite of analysis, which is a destructive or demolishing process.

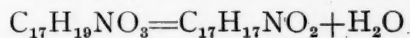
A scientific illustration of the principles of synthesis and analysis is well exemplified in the investigation of the composition of water, one of the first experiments which the beginner in chemistry performs. By electrolysis water is decomposed into its elements, hydrogen and oxygen, in the proportion of 2 volumes of the former to 1 volume of the latter. This you will recognize as the analysis of water. Now, by exploding this same mixture of hydrogen and oxygen with the spark from an induction coil, the elements unite chemically with the formation of water. This is clearly the synthesis of water.

In the domain of organic chemistry the construction of the pharmacopoeial synthetic "hexamethylenamina," better known by the names urotropin and cystogen, is a little more complex but readily understood. When a mixture of stronger water of ammonia and solution of formaldehyde in certain proportions is allowed to stand for about twelve hours, a condensation takes place and the famous urinary antiseptic is formed. The reaction takes place according to the following equation:



This is one of the simplest illustrations of synthesis.

Apomorphine is a well-known article of the pharmacopoeia, which is often incorrectly classed as a synthetic. When the alkaloid morphine is heated in a sealed tube with strong hydrochloric acid, it is broken up into two new compounds, the base apomorphine and water, as follows:



The identity of the original alkaloid is destroyed and the components are both less complex than the morphine. The apomorphine was obtained by a destructive or analytic process, therefore it can not be called a synthetic product, but rather a decomposition product, or a derivative of morphine, if you wish.

While the chemist uses the word synthesis and therefore synthetic for all compounds, whether organic or inorganic, made by the constructive process, the physician and pharmacist commonly connect the word with organic compounds used in medicine.

There is a firmly established impression among a large class of pharmacists and physicians that all synthetics are coal tar products. This is far from the truth. A little later I will show that there is a very large proportion not derived from any of the products contained in coal tar. When bituminous or soft coal is subjected to destructive distillation, that is, heated in retorts without access of air, the compounds originally existing in the coal are split up into simpler ones, some of which are gaseous, some liquid and some solid. The coal gas, when it leaves the retort is passed through water, which absorbs the ammonia, the resulting gas water being our principal source of ammonia. The coal tar was formerly considered a nuisance and could be obtained for the manufacture of sidewalks

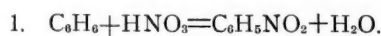
and pavements at a very low figure. It is still used to a slight extent in my home city for that purpose, but I doubt very much that the average citizen of Detroit gets an opportunity to see and smell coal tar. It is now one of the most valuable by-products in the manufacture of coal gas and commands a ready market, because of the valuable constituents it contains.

When coal tar is subjected to fractional distillation, that portion of the distillate which floats on water is called light oil. That which has approximately the sp. gr. of water, and therefore swims in water, is called dead oil, and that which sinks in water is called heavy oil. A further fraction obtained at temperatures as high as 400 degrees C. constitutes anthracene oil from which the parent substance of many coal tar dyes is obtained. The residue in the retort is pitch, used in making varnishes, etc. This classification of the fractions is not uniform with all producers, some collecting more fractions and others less. Over 80 different chemical compounds have been isolated and identified in the fractions obtained in the distillation of coal tar, but there are only a few of these of great commercial importance because of the cost of separation. The most important products are benzene or benzole from the light oil; naphthalene or tar camphor from the dead oil; phenol or carboic acid from the heavy oil, and anthracene from the anthracene oil.

It may be of interest to show by materials and formulae how one of the most popular classes of synthetic antipyretics is developed. When benzene (not benzin obtained from petroleum) is treated with strong nitric acid under certain conditions, the nitric acid radicle NO_2 enters the benzene nucleus or ring and water is split off. The resulting compound is a yellow liquid of

bitter almond odor and of altogether different composition from the true oil of bitter almond. This oil is commonly called oil of mirbane and is used to perfume cheap soaps, floor oils, polishing pastes and so on. When this nitro-benzene is reduced by means of Fe and HCl, whereby nascent hydrogen is generated, amido benzene or phenylamine is formed. The common name for this compound is anilin or anilin oil. It is poisonous and was once administered in the form of the sulphate and hydrochloride as an antipyretic. It was this property of anilin that suggested the introduction of acetanilid. Now by boiling anilin oil with glacial acetic acid, H_2O is split off and the acetyl group or acetic acid radicle replaces the hydrogen of the amido group with the formation of acetanilid. This is easily purified by recrystallization.

This series of reactions will show how easily and cheaply this synthetic is made:



Nitrobenzine



Amidobenzine or Anilin

$2\text{H}_2\text{O}.$



Acetic Acid

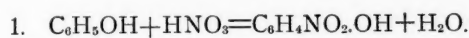
Acetanilid

$+ \text{H}_2\text{O}.$

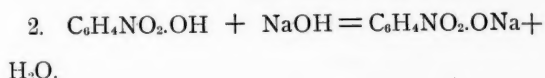
By substituting other acids for acetic acid a great variety of derivatives can be made with physiological actions on the whole the same as acetanilid. If salicylic acid be used in place of acetic acid we obtain salicylanilid; benzoic acid will make benzanilid; gallic acid gallanilid; formic acid formanilid and so on. If bromine be substituted for one H in the para CH group we obtain the synthetic asepsin; with iodine iodacetanilid; if the CH_3 group be substituted for H in the NH group, exalgine is obtained.

The manufacture of phenacetin is a little more expensive but not very much more difficult than the manufacture of acetanilid. Starting with phenol or carboic acid and treating with HNO_3 we obtain para-nitro phenol. The sodium salt can be easily made by adding to it NaOH and by heating this with $\text{C}_2\text{H}_5\text{I}$ para-nitro phenetol is obtained. By reduction again with Fe and HCl as in the manufacture of acetanilid the NO_2 group

is reduced to the NH_2 group and we have parphenetidin. Boiling this with glacial acetic acid, the substitution takes place in exactly the same manner as in the formation of acetanilid. It may be regarded as acetanilid in which the OC_2H_5 group replaces one H atom. It would be known then also as ethoxyacetanilid or as acetphenetidin. By developing these two antipyretics, although it may seem somewhat complex, one is able to appreciate the relationship existing between them and explain that the superiority of phenacetin is due to the entrance in the acetanilid molecule of the ethoxy group.

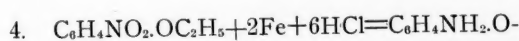


Para nitro phenol

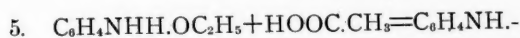
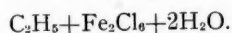


Para-nitro phenetol

+NaI.



Para-phenetidin



Acetic acid

Phena-



cetin.

Here, too, there are a large number of derivatives possible by introducing other acid radicles than acetic. Lactic acid gives lactophenin; salicylic acid produces saliphen; citric acid citrophen; propionic acid triphenin; mandelic acid amygdophenin. The physiological action of all of these compounds and a number of other derivatives of phenetidin are fundamentally the same.

The antipyretics just spoken of are coal tar derivatives or synthetics, but of a list of over 30 synthetics which I found on the shelves of an Ann Arbor pharmacist more than half were not derived from coal tar products. In this list the fol-

lowing were from coal tar: antipyrin, acetanilid, phenacetin, exalgine, lactophenin, nosophen, orthoform, salophen, agurin, xeroform, saccharin, salol, methylene blue, phenolphthalein. Those derived from other sources were iodoform, chloral hydrate, chloralamid, heroin, protargol, argyrol, sulphonal, trional, urotropin, beta-eucain, euquinin, tannigen, tannalbin, aristol, duotal, thiosinamin, veronal, urethan.

Among the newer remedies which have received the recognition of the medical profession is a class which may be strictly called fictitious synthetics. I refer to simple mixtures, some of which are more or less of the shotgun type, which have been dressed in the garb of the synthetic and exploited under pseudo-scientific names as definite chemical individuals endowed with original and extraordinary qualities. The promoters of these frauds chuckle as they hoodwink the professional man with their skillfully worded literature while apparently flattering their scientific acumen. The sad phase of the situation is that after one has been deceived so long he will continue to use personally and prescribe for others such fictitious synthetics, even though he be enlightened upon their true status by competent chemists and pharmacists. You will pardon me for referring to the analyses which perhaps all of you have seen published in the Journal of the American Medical Association of such fictitious synthetics as antikamnia, phenalgin, salacatin, ammonol, etc. In each case it was found that the easily and cheaply made acetanilid was the principal component of the mixture, and merely modified by the addition of some stimulant as caffeine or ammonium carbonate or some salt to aid in the solubility of the

acetanilid as sodium bicarbonate and sodium salicylate.

There are other mixtures that are exploited as synthetics by some of our manufacturers who have heretofore been considered reputable. I have in mind now an external preparation advertised as a definite synthetic compound of a half dozen or more antiseptics and germicides and claimed to liberate at least four powerful antiseptics in a nascent state, when brought in contact with serous fluids. The claims are preposterous and fraudulent on their very face for such a combination of "shot in one load" is an absolute impossibility and contrary to all principles of chemistry.

The committee of revision was authorized by the Pharmacopoeial Convention held in Washington in 1900, "to admit any synthetic product of definite composition which is in common use by the medical profession, the identity, purity and strength of which can be determined. No compound or mixture to be introduced if the composition or mode of manufacture be kept secret, or if it be controlled by unlimited proprietary rights." Acting under these instructions a large number of synthetics were introduced into the pharmacopoeia and doubtless a much larger number would have received recognition by the committee were it not for the limitations placed upon them by the convention. It would be uncharitable to pass judgment upon the admission or omission of any article without first ascertaining its actual status, as we believe was carefully determined by the members of the committee. Those that have been admitted represent, I believe, the ones that are most commonly used by the physician at the present time. Indicating them by their pharmacopoeial and trade

names they are *acetphenetidinum* or phenacetin, *aethylis carbamas* or urethane, *antipyrina* or antipyrine, *benzoesulphinidum* or saccharine, *bismuthi subgallas* or dermatol, *chloralformamidum* or chloralamide, *guaiacolis carbonas* or duotal, *hexamethylenamina* or urotropine, cystogen, formin, etc.; *iodolum* or iodol, *methlythioninae hydrochloridum* or methylene blue, *sulphonethylmethanum* or trional, *sulphonmethanum* or sulphonal, *thymolis iodidum* or aristol. Those that have been continued from the last edition are acetanilid, methyl salicylate, resorcin, salol and terpin hydrate. While there are a few others that are just now being used to a large extent, I think it will be admitted that the above list practically embodies those that the physician is fully informed upon, at least as to the limitations of physiological action and therapeutic application.

According to the plan adopted by the Pharmacopoeial Convention it was recommended that titles be chosen for newly admitted remedies that are in harmony with usage and convenience in prescribing, but in the case of definite chemicals a scientific name to be given as a synonym. This instruction was rather elastic, left much to the judgment of the committee and partially explains the apparent inconsistencies in the terminology of the synthetics introduced.

Much alarm and dissatisfaction upon the terminology of the synthetics in the U. S. P. have been expressed by the medical profession who seem to be completely overwhelmed by the scientific nomenclature of about one dozen new remedies. It is claimed that the names although scientific are meaningless, and that the majority of physicians will not use them. I have learned that there are physicians who have attempted to cultivate

the habit of writing only pharmacopoeial names in prescriptions and have found that some pharmacists were unable to decipher them. The alert, educated pharmacist ought by all means to inform his physicians by means of letters or booklets of the changes made in the new pharmacopoeia and assure him that at all times he is prepared to meet all demands for official articles. More medical men, if assured of this attention, would use the terminology adopted in the pharmacopoeia.

Now what, if any, are the advantages of this scientific terminology? Men of science need not be told that without a scientific nomenclature it would not be possible to bring order and system out of chaos, no matter what the particular pursuit. We have but to compare the arbitrary system of Linneus in botany with the present day almost perfect classification of Engler and Prantl. Without systematic classification, the study of relationship is not possible and without the latter there can be no science. Let us suppose that potassium bromide were known by the fanciful, senseless name "Kazak," and sodium bromide by "Onit" and ammonium bromide by "Sevol." Imagine the physician attempting to determine whether his patient required the peculiar stimulating effect of the ammonia in "Sevol," or the depressing effect of the potassium in "Kazak," or the non-specific effect of sodium in "Onit." Would he not hold up his hands in dismay at this formidable nomenclature? Does not the knowledge of the chemical relationships of the medicinal salts which every physician possesses make it possible for him to follow diagnosis with rational, intelligent therapeutics? One of the greatest objections that can be offered to the

usual nomenclature of new remedies is the fact that instead of being descriptive, suggestive and scientific, they are mostly senseless and therefore do not permit of classification by the educated physician. A systematic classification of the synthetics is possible, in fact has been partially devised, and cannot fail of assisting the physician in a keen differentiation of related bodies.

Suppose some genius conceived the plan of placing on the market common cane sugar under the name of "sugarine" and advertised it in most glowing terms as the most wonderful sweetener the world ever knew at a price of \$1.10 a pound. Another quickly recognizing the credulity of the public exploits cane sugar as "sweetol," and makes additional arguments why it should be used in preference to others and sold it at 75 cents per pound. Another places "ducitol" at 50 cents per pound and finally an honest dealer offers the same article at 5 cents per pound as "saccharum" or sugar. What would you think of the cook that would use several of these brands of sugar in making your pastry? An exactly similar condition exists in medicine today. The pharmacopoeial synthetic hexamethylenamina is upon the market today under the names urotropin, cystogen, aminoformin, formin, uritone, urisol, cystamin and so on, at prices ranging from 10 cents to \$1.10 per ounce. It is not uncommon for physicians to prescribe one or more of these fancy-named but identical synthetics in the same mixture, expecting to get the combined action of different urinary antiseptics. It is also true that patients have been treated first with hexamethylenamina under one name and then with the same article under another name in

the expectation that fooked-for results will finally manifest themselves.

By prescribing hexamethylenamina, the physician receives an article that is uniform and one whose purity and quality can be controlled by the tests of the Pharmacopoeia. Besides that, he is then not a party to the fostering of a graft, which is possible by prescribing the same article under a fancy registered name and sold at a price ten-fold greater than the pharmacopoeial article. Surely no physician wishes to inflict an unnecessary hardship upon himself, or pharmacist or patient.

There is another reason why the physician should make an heroic endeavor to write the scientific nomenclature instead of the short, easily read names and that is to curb the pernicious practice of self-drugging and prescribing by the public, who are generally incompetent to decide what is best for their particular ailment. Cannot some of the dangerous drug habits be traced directly back to a prescription of some easily read synthetic? How often does the physician learn that after prescribing salol, phenacetin, heroin, cystogen and a host of others, his patient has read his prescription, called for the material from the pharmacist, used it ever afterwards and recommended it to his friends with the added assurance that it was indorsed by Doctor So-and-so? Is it not in this way that many of the nostrums were introduced and then finally advertised directly to the laity?

I am firmly convinced that if this matter be considered in a true scientific spirit that in a short time there will be no more difficulty and inconvenience in writing the scientific nomenclatures than writing Sodii bicarbonatis in place of baking soda, Cupri sulphatis for blue stone, Ferri

sulphatis for copperas, and so on *ad infinitum*. I recollect well how some worked themselves almost into a frenzy when antifebrin was introduced into the previous pharmacopoeia as acetanilid, and I dare say less than 1 per cent of the prescriptions for this substance are to-day written antifebrin. There is so much to be said in favor of the scientific terminology and so little against, by all means let us cultivate the scientific habit in nomenclature.

While not exactly germane to the subject, I wish to say a few words upon the exploitation of synthetic remedies. For fear you might assume that I am opposed to the use of synthetics, I wish to disabuse your mind of that. I favor most emphatically the conservative use of these definite substances and believe some of the remedies now in use that have passed through a rigid probation period, will continue indefinitely to enjoy the exalted position in the materia medica. What I would caution against is the tendency of certain classes rushing blindly to the support of anything synthetic, especially if made in Germany and bearing testimonials of German clinicians, many of whom are unknown outside of their own communities. The Privat Docent of the German universities who receives but a mere pittance in salary and is never promoted until his superior dies or moves away, is glad of the opportunity to add to his meager income by testing new remedies and giving testimonials. It is but natural, under the circumstances, that if he discover some desirable physiological action along with others that may be undesirable or even dangerous that he will magnify and exaggerate the former and pass over the latter lightly or entirely. There is no

question that hundreds of chemicals reaching our shores are used for a short time only by those who are always looking for something new, only to be relegated to the shelf of forgotten ones. This practice is very suggestive of the wild speculation in mining stocks, some of which are wild cats of the worst type, others low class speculations and a very few really meritorious. Only last week I was told by a pharmacist that a prominent physician in my home town had in one week written three or four prescriptions for agurin, which, it seemed, no pharmacist in the city had in stock. The proprietor, believing that the physician would continue to use the article immediately added it to his supply. That was over two months ago, and since that time not a single call had been received for the synthetic. It is this transient use of synthetics, without taking any care to determine which are really meritorious, that should be curbed. I believe that it was in 1900 that the famous pharmacologist Professor Kobert suggested to the German Society of Naturalists and Physicians the urgent need of a committee on new remedies, to give unbiased and authoritative reports upon the multitude of compounds seeking the favor of the physician. He deplored in most emphatic terms the manner in which physicians publish accounts of their insufficient clinical experiences at the request or suggestion of manufacturers. It is this carelessness he emphasized that has brought the practice into disrepute and has reflected unfavorably upon the profession as a whole. The instability, the rapidly changing nature of the newer *materia medica* was brought to me more forcibly than ever when Dr. A. R. Cushny, formerly of the University of Michigan, but

now of the University of London, asked me one day to name ten synthetics that had stood the test of ten years' intelligent practice. I began to enumerate them, but could not name the ten, and neither could he.

But, you may ask, what is the physician going to do? How is he to determine which is wheat and which is chaff? Be he ever so willing to inform himself upon the nature of these remedies, I confess, the only source, outside of the dispensaries which, I regret to say, are showing decided ear marks of injected commercialism, is the literature of the promoter, which is apt to be partial, inaccurate, extravagant or even deceptive. I am free to confess that there is little solace for the physician in the pharmacopoeia for the very information he needs most is not contained within its pages. Not even the synonyms of the synthetics introduced are to be found anywhere in the book, as if the intention were to place as many obstacles as possible to its use by the medical profession. I believe, however, that this scientific treatise would be made to meet more nearly the wants of the physician if a united demand were made by the whole medical fraternity. What he needs, as one of the members of the revision committee said, "is some disinterested source for the information on the enormous number of new remedies—meritorious and worthless, safe and dangerous, honest and fraudulent—which are constantly forced upon him and upon which it is next to impossible to ascertain authentic knowledge."

This disinterested source of information would needs be published at intervals and revised to keep pace with progress. For the desired information upon the synthetics of the pharmacopoeia, I

would recommend a careful perusal of Bulletin 23, issued from the Hygienic Laboratory of the Public Health and Marine Hospital Service of the United States Army, entitled "Changes in the Pharmacopoeia of the United States of America. Eighth Decennial Revision." In this pamphlet of over 100 pages so much information is given upon the synthetics introduced that if carefully read it must bring about a greater familiarity with changes that seem almost epoch-making. Besides this there is a crying need for an authoritative source of information on all preparations which the physician may wish to prescribe.

You have doubtless all heard of the organization and the plans of the Council on Pharmacy and Chemistry of the American Medical Association. It is composed of fifteen members, teachers in medical and pharmaceutical schools, chemists, pharmacologists and therapeutists. It is the function of this council to sit in judgment upon the various medical preparations that are offered to the physician and which are not included in the United State Pharmacopoeia. These preparations will include, in addition to synthetics, so-called proprietaries and specialties with trade marked names. Those preparations which conform to the standard established, embodied in the rules of the council, will be admitted to a book issued by the A. M. A. and designated "New and Non-Official Remedies." Briefly, the rules are as follows:

No article will be admitted unless its active medicinal ingredients and the amounts of each in a given quantity of the article be furnished.

No chemical compound will be admitted unless information be furnished regarding tests for identity, purity and strength and, if a synthetic, the rational formula.

No medicinal article that is advertised to the public will be admitted.

No article will be admitted whose label, package or circular accompanying the package contains the names of diseases in the treatment of which the article is indicated.

No article will be admitted of which the manufacturer or his agents make false or misleading statements concerning geographical source, raw material from which made, method of collection or preparation, or about whose therapeutic value unwarranted, exaggerated or misleading statements are made.

Labels on articles containing heroic or poisonous substances must show the amounts of such ingredients in a given quantity of the product.

Admission to the book does not mean indorsement, but merely that the preparation conforms to the rules; that is, is ethical and not wrapped in a cloak of secrecy and fraud. The task of the council is tremendous and the number of preparations to be passed upon almost overwhelming. Some are getting impatient with the council because it is not working faster and giving tangible evidence of its existence and activity. It must be remembered that this work is very similar to that of the revision committee of the U. S. P.; in fact, is taking up the work where they left off, so to speak, and they were five years in materializing the revised edition.

The reputable manufacturers both at home and abroad have expressed themselves in no uncertain manner in favor of this movement, for they have nothing to fear. It is the commercial promoter whose principal ambition and pride seems to be the accumulation of wealth at the expense of a sluggish public, and who fears that the tribute he collects will be curtailed, should the truth be told, who is opposing this movement and hurling bitter invectives and artful inuendoes at the council. The physicians are a unit, I believe, in support of this work and for that reason no appeal for your encouragement is necessary. The motive which prompts this campaign is certainly not a mercenary one, but merely a patriotic desire for honesty in pharmacy and medicine.

THE THERAPEUTICS OF THE SYNTHETICS IN GENERAL USE.

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Anything like an attempt at a comprehensive review of the synthetics that are now generally used would be manifestly absurd in a fifteen minutes' paper. The ever increasing number of new remedies of this class, their complexity and the scattered condition of the literature make the task bewildering.

Great numbers of such products that were heralded five or six years ago with voluminous literature, containing reports that seemed very convincing and wonderful, are forgotten today.

But out of this multitude, from time to time, one product and then another begins to shine with a clearer light, isolates itself from the others, and begins to take a definite place among the drugs in daily use, eventually finding its way into the pharmacopœia.

We wonder when we realize that all this array is built up by simply differing the chemical arrangement of not more than six elements, and that they are capable of further combinations as innumerable as the countless musical harmonies that can be produced by changing the arrangement of seven notes. Arranged in one order we have a dirge, in another we have a dance. Similarly, one arrangement of certain atoms gives us an hypnotic, while the same atoms in different chemical grouping gives us a cathartic. The chemists show us that such well known articles of food as starch and sugar contain exactly the same elements as

strychnine only in different grouping.

For the sake of getting a starting point, I shall take up the synthetics in general use, according to their class and therapeutic manifestations, and shall attempt to sum up briefly their indications and incidentally to recall some of the errors we make in using them.

It seems reasonable to begin with the best known of all the classes, the analgesics. This class contains such well known remedies as acetanilid, phenacetin and antipyrin. These are also the most used antipyretics in the synthetic group. Lauded to the skies on the one hand and utterly condemned on the other, even by such an authority as Jacobi, they have proven themselves anything but an un-mixed blessing.

Exactly what the action of these drugs is on the protoplasmic chemical activity has not been definitely determined, and also as far as their antipyretic action is concerned, while much has been written as to the part played by radiation and evaporation, it seems to be conceded that their action is mainly due to their lessening oxidation, thus actually lessening the production of heat.

Undoubtedly they are much less used as antipyretics than they were a few years ago. Their interference with metabolism and the subsequent depression which they produce make physicians afraid of them in all long-continued diseases. Nevertheless, where it is deemed advisable to use them as antipyretics they are certain, and efficient, reducing the temperature in

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the case of antipyrin in less than an hour; more slowly, but with less depression in the case of phenacetin. The fall of temperature, however, is independent of the diaphoresis which occurs at the same time; the latter can be prevented, when desired, by the use of atropin, without changing the efficiency of the antipyretic action.

The second great indication of these coal tar derivatives is their power of relieving pain. It appears to have been demonstrated that they are unreliable for inflammatory pains. But in the pains of influenza, and of migraine, in the neuralgias in which the pain is the outcome of nerve storm and in ordinary rheumatic pains, their action is little short of marvelous. It is this wonderful power that has caused their promiscuous use by the laity in the form of the thousands of headache cures. So great is the demand for these preparations that nearly every druggist exploits a sure cure for headache, stamped with his name, and usually containing acetanilide in whatever dose he sees fit to exhibit. Little boxes of headache tablets are about as prevalent as the old-fashioned snuff boxes used to be. If proof is to be desired, one has only to complain of a headache, at a dinner, or anywhere where a few are gathered together, when the most skeptical will be immediately convinced.

I have heard it asked in this society, by well known physicians: What harm do these preparations do? What if they do sometimes produce cyanosis and collapse? How many have ever seen a death from these drugs? It is very probable that none of us have. Still we know that their continued indiscriminate use interferes with metabolism, disturbs thermogenesis so that a condition of absolute intolerance to

cold is produced, with feeble heart action, with not only a decrease in the number of red blood corpuscles and the percentage of haemoglobin, but also marked increase in the number of white blood cells.

An inquiry two years ago into the cause of the large increase in the number of sudden deaths in New York city seemed to prove the indiscriminate taking of the coal tar products by the laity as directly responsible.

Passing to the hypnotics, the most generally used comprise, heroin, sulphonal, trional, veronal and chlorotone. Heroin, though a poor hypnotic, stands in a place by itself. Although a morphine derivative, it differs from the latter drug in its action on the respiratory apparatus, producing increase in the volume of inspiration and the force of the expiration, together with a general sedative action upon the broncho-pulmonary tract. Probably no drug can compare with heroin as a preventative for the distressing stagnation of secretory products in the lungs, particularly in cases of pulmonary tuberculosis, and in the cough and dyspnea in organic disease of the heart.

Sulphonal is a very valuable hypnotic, much slower, though hardly as certain as trional. It was first exploited as particularly useful in the insomnia of cardiac disease. Here, however, it has proved inferior to chloral. It will be found that sulphonal is of most value in those cases in which the individual wakes up after a few hours sleep and is unable to sleep again, while trional is of most value in those cases in which the patient cannot sleep from the first.

Veronal is one of the newer hypnotics. It is safe and is especially valuable in the treatment of insomnia with motor excitement.

Chlorotone has proven less certain than any of the others, but appears to be the most efficacious in the persistent insomnia of the aged.

Among the synthetic antiseptics and disinfectants, we have quite a long list in popular demand. Were it not for its abominable odor iodoform would still rank among the best. It is not in any sense of the word an antiseptic, not being in itself even sterile. It is capable of infecting a previously aseptic wound. It is poisonous but popular. Its virtue, as a disinfectant, depends upon the amount of iodine which it liberates in the presence of moisture. And this is also true of the odorless substitutes, aristol, eucrophen and iodol, all of which are very commonly used. They all, unfortunately, have the faculty of forming crusts which interfere with drainage and thus defeat one of the first principles of good surgery.

It appears that the value of iodoform is in direct proportion to the foulness of the wound. I believe that the local anesthetic properties of iodoform are not sufficiently appreciated, particularly its power of benumbing the rectum. I have seen, time and again, patients sleepless and in misery from the pain of prostatitis sleep calmly the whole night through after the exhibition of a suppository containing 2 or 3 grams of iodoform.

Salol and salophen are drugs having the same therapeutic indications. Great things were expected from salol in the treatment of rheumatism. At the present time it is used almost exclusively as an intestinal and urinary disinfectant. Carbolic acid and salicylic acid, being liberated by its decomposition, Wood considers it the most efficient of our intestinal antiseptics.

Duotal and benzosol, which are respec-

tively the carbonate and benzoate of guaiacol, have a wide field of usefulness. Both are used as substitutes for guaiacol, but are less irritating and have less unpleasant taste. Some quite remarkable results have been reported in the treatment of pulmonary tuberculosis by benzosol, gr. V. t. i. d. for a year, while as an intestinal antiseptic benzosol can be given in gr. xx. i. doses to adults, while children take gr. v. with excellent results.

In this connection, we must also mention such silver preparations as argyrol, containing 30% silver, and protargol, containing 8% silver, both having distinct advantages over nitrate of silver, inasmuch as they are not precipitated on contact with albumin, the alkalies or dilute hydrochloric acid. Argyrol is probably the most popular of all the recent silver preparations in the treatment of gonorrhea; used in solutions of one to ten per cent., and held in the urethra from 5 to 15 minutes, it absolutely destroys any gonococci with which it comes in contact, and its action extends to the deeper layers of the mucous membrane. After the destruction of the gonococci, the remaining discharge can be arrested by astringent injections. It is probably the most positively preventative of gonorrhea known. Two drams of a 10% solution held in the urethra five minutes, is the method of procedure. In the treatment of ophthalmia neonatorum I have used 25% argyrol solution dropped into the eyes, t. i. d., with remarkably good results, and with none of the pain coincident with silver nitrate.

Methylene blue is another drug in this class much used in the treatment of gonorrhea. In this connection, it seems probable that it has been very much overrated and at best may be set down as a mild

genito-urinary antiseptic. Its greatest therapeutic value is in its use as a succedaneum for quinin. In this respect it is unrivaled and may be given whenever the latter is indicated, or whenever in malarial fever quinin is contraindicated.

The local anesthetics. Here we have prominently beta-eucain, which has superseded alpha-eucain, and orthoform. Eucain is somewhat less powerful than cocain, but is much less toxic. In ophthalmic practice it is used in 2% solutions and has an advantage over cocain in that it does not dilate the pupil, but it smarts more than cocain. It possesses other advantages in forming a permanent solution with water in 3½% strength, and such solutions can be boiled without such sterilization causing decomposition of drug. In 1900, Barker, in the *Lancet*, reported a long series of major operations under eucain anesthesia.

With orthoform, my own experience has chiefly been in the treatment of painful affections of the throat. In ulcerative sore throat and tuberculous laryngitis, great relief from the pain and swelling can be obtained, using gr. ¼ to gr. ½ in the form of a lozenge, as suggested by Solis-Cohen; it comes in direct contact with the exposed sensory nerve filaments. When used before a meal, it affords, in a few minutes, marked relief and the effect is quite prolonged. Orthoform is comparatively harmless, and with regard to the disagreeable after effects sometimes reported, it would appear that there is an occasional intolerance. It is probable, however, that the fault is more often with the physician who leaves its administration to the patient, who, in his efforts to continue the relief, uses it too freely.

I should like, were it not that the paper is getting too long already, to write on

the alterative, ichthyol, the antirheumatic, aspirin, with its great advantages, physiologically and therapeutically over the older salicylates, and the diuretics, theobromin, diuretin and urotropin.

Probably few, if any, new remedies have been so thoroughly tested and so favorably commented upon as urotropin. It effects a genito-urinary asepsis which has been hitherto impossible to attain. It fails to act only in gonorrhea and tuberculous bladder affections. It is of remarkable value in pyelitis, cystitis and ammoniacal phosphaturia. I think that the most common error we fall into in the exhibition of urotropin is the failure to remember that in order to have urotropin decomposed it is necessary to have an acid urine, and that though this drug tends to produce urinary acidity, it is often necessary to administer benzoic or boric acid in conjunction with it to maintain the acidity.

Urotropin is used as routine practice by many physicians in the treatment of typhoid fever to keep the urine free from the typhoid bacillus, and to prevent such sequelae as cystitis and orchitis; also to lessen the danger to the community after recovery, it having been demonstrated that the bacillus can often be detected in the urine long after convalescence.

Reports apparently show that its routine use in scarlet fever diminish the liability to nephritis.

I wish here to take exception to the dose recommended in many recent text books, i. e., 15 to 20 grains. I believe such dosing excessive and liable to produce hematuria.

Cathartics. I know of but one synthetic purge, phenolphthallein. This preparation has been quite extensively used in Austria-Germany and England, where it

has been exploited as a harmless gentle aperient, for children and adults. It has been adversely criticised by Schwars, who advises caution with children, as phenolphallein is a phenol derivative. Vamssey, however, points out that it does not give off phenol within the system. It is sold in Europe under the designation "purgin," and under this name it has recently been introduced to the profession in this country. My own experience with it has been limited. Administered to children in from gr. $\frac{3}{4}$ to gr. $1\frac{1}{2}$ at night, it produced one or more rather liquid evacuations in the morning, with no pain. The tablets in which it is put up have a decidedly pleasant taste, so that it is easy to administer to children. I have administered it to adults in 10 gr. doses (15 gr. is considered a large dose) at night, producing several free watery evacuations in the morning. Often gr. 3 were sufficient to produce this result. According to some high authorities, its properties can be summed up as follows:

It acts as an aperient in chlorosis and in jaundice.

It does not irritate the kidneys.

It lowers arterial tension less than magnesium sulphate.

It can be administered for a long period when other remedies cause vomiting.

It is valuable in cases where it is not desired to stimulate peristaltic action.

It would seem from this that phenolphallein does not depend on increasing the flow of bile for its cathartic action.

That it is a safe aperient in the various forms of nephritis.

That it would be indicated where it was desired to produce watery evacuations without greatly lowering arterial tension.

Its action is doubtful in paresis of the intestinal canal and in those individuals who have overused powerful purgatives or taken opiates for a long time.

Phenolphallein is a distinctly new form of cathartic, and I think possesses characteristics valuable enough to commend it to our careful consideration.

I believe it will be one of the aperients of the future.

Eye Disease Due to Autointoxication.—

ELSCHNIG ascribes to gastrointestinal autointoxication, as evidenced by the presence of indican in the urine, especial prominence in the etiology of many serious diseases of the eye. According to the author's observations, this condition exerts an important influence in internal ophthalmoplegia, more rarely in paralysis of the extraocular muscles, and in diseases of the optic nerve. His experience corresponds with Sachs' observation, that it is an important accessory in tobacco and alcoholic amblyopia. Many cases of recurring keratitis, recurring scleritis, episcleritis periodica fugax, recurring iritis and insidious iridocyclitis

appear to be due to gastrointestinal autointoxication. Many patients with the last mentioned diseases present signs of hereditary lues, but anti-luetic treatment is without effect. Probably the hereditary lues produces changes in the glandular apparatus of the intestinal tract or in the innervation of the intestine which alter the chemistry of digestion as well as the products of decomposition, and thereby cause autointoxication. In all the diseases cited, regulated diet, long continued and oft repeated intestinal disinfection have effected a marked improvement or a complete cure where other therapeutic measures failed.—*Münch. med. Woch.*, Oct. 10, 1905.

IMPORTANT DISCOVERIES AND PROGRESS IN MEDICAL SCIENCE SINCE THE TIME OF HIPPOCRATES*

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Olivet.

The science of medicine consists almost entirely of the applications of the principles and methods of other sciences to the study of medicine. New discoveries and developments along physical and chemical lines are quickly applied to medical research and lead to new developments in this field. The oculist in fitting a pair of spectacles and the microscopist making his observations, are largely carrying out applied optics. The clinician, tapping the chest or listening to the sounds of the heart, is simply working in the field of applied acoustics. The analysis of the urine and of the stomach juices are purely chemical procedures, yet this fact is often overlooked so distinctly a medical operation has it become.

Before other sciences were developed and until our medical knowledge was considered in the same light as botany, geology, etc., medicine could not be called a science. In fact it is only within the past few years that it has approached anything like a scientific study.

The early history of medicine is pregnant with interest, and the old superstitions and whims are fascinating in the extreme. In the early period, the priests and teachers were looked upon as being the chief sources of wisdom in the land. The priests combined the office of healers of the body with that of teachers of religion. The three sciences they chiefly

studied were astronomy, theology and medical botany. As chemistry was not developed, the treatments were mainly confined to concoctions of herbs and other substances. They believed some herbs to be endowed with magical virtues. Prominent among them was one used to anoint the person to prevent fevers, to procure friendships, and in fact to secure anything the heart might desire.

As early as 430 B. C., the art of medicine was protected and encouraged by the state. Medicine, commerce and navigation were called the three civil arts, each of which had a corporate privilege.

One of the laws of ancient times deals with the offices and privileges of a mediciner, or physician, with an account of his duties and fees. He was liberally rewarded when the patient recovered, but a penalty was attached if the patient did not recover or an operation proved a failure.

A few receipts taken from an old collection will illustrate their meagre knowledge of drugs and their uses, and what a part superstition played in their treatment.

The following was given for falling sickness: "Burn goat's horn, directing the smoke upon the patient and in consequence of the smell he will forthwith rise. Before he has risen from the ground, apply dog's gall upon his head and the disease will not attack him again."

They also had a favorite one for pain in the eye, consisting of "the gall of a hare, of a hen, of an eel, and of a stag mixed with fresh urine

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and honeysuckle leaves and the gum from an ivy tree," that was said to be so efficient that it would cause one to see stars in the day time, in consequence of its great virtue.

The priest, under the mental and social conditions in which this combination has usually been observed, relied upon his magic rites, and his incantations appealed to the superstition and ignorance of the sufferer. Should he discard such means, his influence would vanish. Knowledge, reason and logic are essentials to him who essays to heal the sick, hence it was inevitable that as intelligence increased, the function of the superstitious priest should be divorced from that of the physician.

This separation of medicine from priestcraft has not occurred as a chronologic sequence, but is a logical and evolutionary one. Just when priestcraft, superstitions and magic were discarded in the treatment of disease cannot be stated, but the separation is attributed to Hippocrates, the most celebrated physician of antiquity, of whom it was said that "he was a sworn enemy of charlatans."

True medical history had its beginning with Hippocrates. It was he who put the science of medicine on a rational basis. Not only did he observe facts but he and his followers liberated medical art from mysticism. In his works, he firmly established the "Method of Observation" reaching the truth through intuition, anatomy and physiology being unknown to him. The key to his fame is to be found in the following words which occur in his writings. "We must extract the rules of practical medicine from experience, directed by reasoning." Although highly esteemed, at the time, as a physician and author, his teachings seem crude compared with our present knowledge. The

four fluids of the body, the blood, phlegm, yellow bile and black bile were regarded by him as the primary seats of disease. Health was the result of due combination of these, and illness was the consequence of their disturbance.

Galen, who flourished during the first century of the Christian era, was, next to Hippocrates, the greatest of the ancient fathers in medicine. He translated into Latin the works of Hippocrates, studied anatomy and physiology, introduced a new theory of disease—the theory of distempers, with appropriate remedies for relieving them.

For several centuries following the days of Hippocrates and Galen, known in medicine as the "Dark Ages," but few advances worthy of mention were made. During this period the profession of surgeon and barber were united, and it is from this that we get our striped barber pole, the red stripes representing blood shed in surgery.

Ambrose Paré, a barber surgeon, gave to the world the method of using a ligature for tying bleeding vessels, in place of using boiling tar, oil, or hot sulphur, as was formerly used to arrest hemorrhage.

The seventeenth century witnessed the discovery of the circulation of the blood, by Harvey, as well as many discoveries in anatomy and physiology. About this time, clinical instruction was introduced into hospitals and systematic post-mortem examinations were made with an endeavor to connect, wherever possible, morbid changes found within the body with the history of the patient's disorder.

The two great factors which enter into the present epoch of growth are the study of pathology and the practical methods of clinical research. Both of these had

their beginning in the eighteenth century.

Prior to this, dependence in diagnosis was placed entirely upon symptoms as related by the patient, the naked eye appearance of the body and such changes in temperature as could be detected by the hand. When people began to associate symptoms with the pathologic conditions found, improvements and discoveries to assist practical methods of clinical research made rapid strides.

Avenbruger first discovered that by tapping the chest, different sounds were produced, and from the varying resonance of the sounds, an opinion can be formed of the internal condition of the cavity. After years of study and observation, verifying his observations by dissections and by the appearance of the diseased tissue after death, he published his results in 1761. It was several years later before the profession were convinced of the value of percussion, its utility then being impressed upon them by Corvisart, a French physician and medical adviser to Napoleon Bonapart.

Closely connected with this is the discovery made by Lænnec, in 1815, of placing a hollow cylinder of wood or paper next to the ear and against the patient's chest in order to listen to heart sounds and murmurs of the lungs during respiration. Simple as this seems, no one thought of practicing it for some years after the value of percussion had been demonstrated.

In 1797, Currie demonstrated the practical use of the thermometer in disease. In this century also, was made the immortal discovery of vaccination by Jenner, one of the greatest boons the human race has ever received. After spending 22 years investigating this discovery and after an expenditure of thousands of

pounds, his results were made known to the public in 1796. It is claimed that no single scientific truth has been so fruitful in the salvation of life, as that introduced by Jenner.

For generations those whose mission it was to alleviate human ills by surgical means, sought for some means by which to allay the pains which they were obliged to inflict upon their patients. The victim of a surgical operation was often drugged and nauseated or benumbed into a condition of semi-sensibility by toxic doses of opium, alcohol or even nicotine. The discovery which came as a revelation, to rob surgery of its bitter pangs, was wholly American.

Dr. Wm. J. Morton, a young dentist of Boston, full of energy and enthusiasm, realizing the great need of some means of alleviating suffering, experimented for several months with different drugs until finally he hit upon a drug which he found, by experimenting upon animals, to be absolutely satisfactory. Full of eager enthusiasm and absolutely confident of his results he went to Dr. J. C. Warren, one of the leading surgeons of Boston, stating to him that he had an agent which would produce unconsciousness and insensibility to pain and begged an opportunity to try its merits. The request was granted and accordingly on Oct. 16, 1846, in the presence of several of the foremost surgeons of the city, Morton administered the mysterious substance, which he termed "letheon" to a patient, from whom Dr. Warren proceeded to remove a tumor of the neck.

The patient slept quietly while the surgeon's knife was plied and awoke to astonished comprehension that the ordeal was over. The impossible, the miraculous, had been accomplished. The same success attended subsequent operations, but in a short time the surgeons of the hospitals refused to countenance Morton's discovery further, unless he revealed its nature. He yielded and "letheon" proved to be nothing but sulphuric ether. Swiftly as steam could carry it, the news was heralded to all the world. It was received in Europe with doubt, which vanished before repeated experiments.

Then there came a lingering cry by a few surgeons that the shock of pain was beneficial to

the patient, hence that anesthesia, as Dr. Oliver Wendell Holmes had christened the new method, was a procedure not to be advised.

And, too, there was a hue and cry from many a pulpit that pain was God-given and hence, on moral grounds, to be clung to rather than renounced and when it was advocated "to administer an anesthetic not only in surgery, but to suffering woman in time of sorest need," its advocates were advised to read and ponder over the 16th chapter of Genesis, where it reads: "Unto the woman he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children."

To all these arguments, counter arguments were given and the opposition was cited in the closing verses of the 2nd chapter of Genesis which they claimed to be the true and authentic record of the first instance of the use of an anesthetic, by which a precedent was established for all the similar emergencies. "And the Lord caused a deep sleep to fall upon Adam and he slept and he took one of his ribs and closed up the flesh instead thereof."

So popular did the method become and so anxious were unfortunates to be relieved from suffering needless pain, that within a few months after that initial operation at the Boston hospital in 1846, ether had made good its conquest of pain throughout the civilized world.

The development and perfection of the microscope in the second and third quarters of the past century, added a mighty weapon to the physician's armamentarium. The microscope was an aid to investigations along many lines, and was the *one* necessary means by which the teeming world of bacteria was made visible.

The discoveries and knowledge which have come from a study of these infinite organisms during the last score of years, has completely revolutionized medicine and surgery. The wonders that have been, are, and will be revealed by the microscope excite in the mind of every true physician a feeling of intense admiration, an admiration verging on reverence. Without the microscope, we would still be ignorant of many of the well known

diseases of the various organs of the body, and most of those affections dependent upon animal and vegetable parasites would have remained unknown and undiscovered.

More than two centuries ago investigators were able to see living micro-organisms in all forms of decomposing substances and believed that similar organisms existed in diseases which might be due to this agency. This theory received but little attention, however, until by means of better instruments, later investigators were able to describe more accurately what they saw.

At various times, investigators attempted to take up and prove their theory but soon it came to be regarded as an obscure hypothesis. The natural history of the micro-organisms, however, never lost its interest to scientists and late in the eighteenth century it was again taken up and considerable advancement was made, but it remained for the master mind of Louis Pasteur, a French chemist, in 1861, to collect the scattered facts of the early discoveries and establish the rôle played by micro-organisms in the processes of fermentation and putrefaction.

There was nothing in these studies bearing directly upon the question of animal diseases, yet before they were finished they had stimulated progress in many lines of pathology and blazed the way for others in the study of bacteria as agents, not only in putrefaction and fermentation, but also in pathologic infections in animals.

In 1876, Pasteur was again prevailed upon to take the matter in hand and establish some relation if possible, between germs and animal diseases. The great chemist was becoming more and more exclusively a biologist as the years passed

and, aided by his former experiences, he was soon able to demonstrate beyond a doubt that the disease anthrax, a disease common among animals of Europe, was due to the introduction into an animal's system of a specific germ which develops there. No logical mind could doubt that what was proved true in one infectious disease, would some day prove true also of others, perhaps of all infectious diseases.

About this time Robert Koch, a German, discovered methods by which a differentiation of bacteria was made possible and by these means, during the 20 years following, there has been isolated the specific germ causing tuberculosis, typhoid fever, cholera, diphtheria, pneumonia, erysipelas, gonorrhea, epidemic dysentery, plague, glanders and many other diseases.

Hitherto the cause of contagion by which certain maladies spread from individual to individual, had been a total mystery. Now for the first time the world knew and physicians were enabled to apply the drug treatment more rationally. Medicine thus took another gigantic stride toward the heights of an exact science. The march of science, however, was not to be arrested at this point. The genius of Joseph Lister, later Lord Lister, applied the germ theory to surgery which brought about a condition long yearned for by surgeons throughout the world. Lister, aided by the results of Pasteur's researches, arrived at the conclusion that suppuration, or pus formation, was due to decomposition or putrefaction and naturally evolved the idea that if decomposition of blood serum and destroyed tissue in wounds could be prevented, nature would repair much in the same way as she did in the case of simple

fracture. He began with the supposition that the air contained the germs which are most active in producing suppuration and disease. It had been the custom until Lister's time, to use ordinary forms of cleanliness in preparing instruments, ligatures, etc., but no effort was made to free them from germs. Lister's investigations showed the utter inadequacy of such preparation. His most important object lesson, however, was that everything that came in contact with flesh or bleeding wounds might carry infection, unless it had been itself freed from their presence. The original method of Lister was very elaborate, including a continuous dissemination throughout the air of the operating room, of a vapor of carbolic acid which was, of course, disagreeable, sometimes being almost fatal to operators and bystanders. The instruments were placed in strong antiseptic solutions, which were pungent and irritating.

Hardly had this theory reached completion before investigators began to modify and improve upon it. The simplicity of the problem at last became apparent.

The surgeon who works antiseptically, begins by attempting to destroy bacteria and throughout his work continues the process of destruction, not only of bacteria, but often the vitality of the tissues themselves by the antiseptic used. The surgeon who works aseptically attempts to remove all bacteria from everything which is to come in contact with the wound, to prevent the entrance of bacteria into the wound and to avoid the creation of a single condition favorable to germ life.

Since 1890, the old antiseptic method has given place to asepsis, which forms the corner-stone of the foundation of

modern surgical science. This together with the acquired skill of modern operators is what has enabled such marvelous results to be accomplished today in the surgical field.

Listerism in surgery had now shown how much might be accomplished toward preventing the access of germs to abraided surfaces of the body and how to destroy those that had already found lodgment there. As yet, however, there was no way known by which a corresponding onslaught might be made upon those other germs which find their way into the animal organisms by way of the mouth and the nostrils and which, as is now clear, are the causes of those contagious diseases which claim so large a proportion of their victims. How such means might be found now became the anxious thought of every imaginative physician.

The world was not kept long in waiting, as almost before the proposition had taken shape in the minds of other leaders, Pasteur, that tireless worker, had found a solution.

Guided by the success of Jenner, he had long practiced inoculation experiments upon animals, and in 1880 he announced that he had found a method of reducing the virulence of disease germs similar to that of vaccination against smallpox.

The particular disease experimented with was that infectious malady of poultry known as chicken cholera, but he did not hesitate to assert his belief that the method could be applied to other diseases than the particular one in question. Within a few months he made good his prophecy by announcing that he had produced an attenuated virus of the anthrax microbe by the use of which he could protect sheep against that fatal disease.

It was now a foregone conclusion that the principal thus established would be still further generalized; that it would be applied to human maladies and sooner or latter would grapple successfully with many infectious diseases. That expectation has advanced rapidly toward realization.

Pasteur, himself, made the application to the human subject in the disease hydrophobia, in 1885, since which time that hitherto fatal malady has largely lost its terrors. Thousands of persons bitten by mad dogs, have been snatched from the fatal consequences by this method.

Nuttall conclusively demonstrated, in 1888, the power possessed by the blood serum of combating the poisonous products of bacterial growth, but to Berhing and Kitasato belongs the credit of having found in 1890, a practical method of utilizing antitoxins in the treatment of disease.

After Loeffler had isolated the specific germ causing diphtheria and was able to produce the disease in animals by inoculation, experiments were carried out showing that the fatal results following this disease were not due to any extension of micro-organisms within the body but to the absorption of a poison or toxin produced by the germ in the process of its growth. These toxins they argued, are accountable for the fever, the prostration and other general symptoms as well as for the anatomical changes in the immediate neighborhood of the growing germs. So long as they continue to be produced, the disease progresses. But hand in hand with the production of these poisonous substances there are produced, presumably by the cells of the body, certain antagonistic substances which tend to neutralize the toxic principles. These antag-

onistic principles have been called "anti-toxins."

The toxin produced by the disease could be separated from the bacilli causing the disease, and investigators set about to discover some means by which this toxin could be neutralized in the body by some artificially prepared anti-toxin.

To Berhing belongs the credit of bringing before the world the first anti-toxin product. The introduction of this treatment for disease has reduced its nature from being one of the most virulent in character to one of comparative innocence. It is now considered almost absolutely harmless and a specific for the disease, having reduced the death rate from over 40%, since its introduction in 1894, to below 10% at the present time.

While the serum treatment has not proved successful in all the diseases in which it has been used, yet it has been so successful in some as to firmly establish the principle of serum treatment, and we have much to hope for along this line in the future.

Roentgen, of Wurzburg, in 1895, stated that he was able to penetrate opaque objects by what he called the X-ray. The announcement was received with astonishment not unmixed with doubt.

All now recognize its extraordinary value for diagnostic and other purposes and its use, which is already general, is daily extending. The wonderful results which have attended certain manifestations of light and electricity, when applied for therapeutic purposes, have also astonished us and lead us to believe that

medical science is still in a nascent state and that a new era in medicine is about to dawn in which the far reaching serums and other methods may displace those we now consider more or less effective.

The nineteenth century has astonished us with the wealth of its products, but the coming century promises marvels just as great. Medical schools are awakening and are being transformed into centers of productive research work as well as scientific training schools.

Today the problems of immunity and preventive medicine are uppermost and are the natural consequences of the scientific thought that has been erected during all these years.

And now having followed the story of our art over 3,000 years and more, from the dim and misty past, of incantations and superstitions, from the early days of Grecian civilization, when Hippocrates made a specialty of medical science separating it from the other sciences, to the days of Jenner with his important discovery of vaccination, followed by developments in anatomy and physiology, more exact methods in diagnosis made possible by the discovery of the thermometer, the stethoscope, the microscope and other devices, to the discovery of ether, by which surgery was rendered painless, and bacteriology by which it was made safe and placed preventative medicine on a rational basis, we can pause to ask whether, after all these developments, human suffering has been mitigated or human life greatly prolonged.

To both of these questions our answer is an emphatic yes.

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Editorial.

SOME PHASES OF THE CANCER PROBLEM.

While there are still many mysteries connected with medical science and many problems which have not as yet been solved, the one great question remains unanswered—the etiology of carcinoma. This problem has been approached from many different sides by many different workers, and at the present time there is scarcely a laboratory in the world where there are not keen, clever and industrious men striving to master the subject.

One great obstacle which has prevented experimental work on cancer has been the great difficulty in producing the disease in laboratory animals. Many of the problems connected with bacteriology were comparatively quickly worked out, because it was possible to study the effects of inoculation from animal to animal. Not so, however, with carcinoma. At least not until recently.

The Walker Prize, awarded at stated intervals in London, for the best work on the pathology and therapeutics of cancer, has just been voted to Professor Carl Jensen of Copenhagen, the discoverer of the familiar "Jensen Mouse Tumor." His work has afforded an almost unlimited amount of material for study and has made possible experimental in-

vestigation on a large scale. Jensen first conducted a large series of inoculations through one thousand mice, comprising thirty-five generations, and numerous laboratories are now supplied with this living material. A moment's thought will impress one with the wonderful opportunity which this never failing supply of material affords. It is now possible to test, in whole series of animals, the effects of various physical agencies, such as heat, light, electricity and radium, of various chemical agents and of various solutions of the different enzymes. A whole new field has been opened up.

It was not only the work which Jensen himself has done which influenced the award, but also the opportunities which he has given to the workers the world over, opportunities which will enable them to carry out their investigations over long periods of time and under better conditions than ever before. Mayhap something will come of it.

One phase of this question, or at least an hypothetical cure which is directly dependent upon the mouse tumor has been pretty thoroughly discussed of late in the lay press. The public prints have been inspired by an article which recently appeared in a magazine from which we expect better things. When a Journal with the prestige and influence of *Harper's Weekly* proclaims in bold faced head lines "The Coming Conquest of Cancer," wide attention is sure to be given to the subject. This would be well enough, were there a reasonable basis for such an assertion. The author who writes under this alluring and alliterative title is Dr. C. W. Saleeby, the eminent author of the "Cycle of Life." The

author first disposes (to his own satisfaction and perhaps correctly enough) of two or three fallacies concerning the cancer problem—He says, "First of all, let me positively deny the widespread assertion that cancer is increasing among us." "My second point is that recent statistical inquiry throws much doubt upon the common belief that the tendency towards cancer formation is transmissible by heredity." "My third point is that we are not justified in believing or suggesting that cancer is an infectious disease."

Salisbury then goes on to review the work by which Dr. John Baird of Edinburgh has attempted to prove that a cancer is the product of the Weismann germ cell. According to this theory, the germ cell, which is parthenogenetic, is arrested at the "critical period" and "precisely at this critical period, the pancreas wakes into activity and its alkaline product actually digests the structures corresponding to the parthenogenetic stage of development—the structure which Baird calls the trophoblast; a cancer, let us remember, being a late developed and 'irresponsible trophoblast.'"

Having arrived thus far, it is an easy step to the supposition that the secretion of the pancreas—*trypsin*—is the long sought cancer cure. Salisbury then goes on to say that Baird's experiments have proven this to be true, ending his article with the words, "Only the philosophic few could have guessed for a moment that Dr. Baird's long and famous researches would ever enable him—as they would indeed appear to have enabled him—to place in the hands of the physician, a veritable cure for cancer."

Is it any wonder that the press has been filled with announcements that can-

cer is now curable? Is it any wonder that we are receiving most enthusiastic circulars from manufactures who are putting trypsin on the market for this purpose? Read *Harper's Weekly* and these circulars and you are convinced. Read Baird's article—and what is the evidence?

Two mice, with Jensen's tumor, were treated with trypsin injections. After four treatments, one became caught in the cage and died. The other mouse received nine injections and was killed on the twenty-second day. The tumor had decreased in size and, as in the other also, there was degeneration of the cancer cells. Baird then says, "Though the number of experiments is small, already they have established what in advance I knew they would. In advance I knew that no matter how often we repeat this experiment, even with much smaller doses, the like results will invariably be obtained."

It may be so because the author of the hypothesis knows that it is so, but the fact remains that the evidence which must establish the truth of what we read, in the magazines, daily papers and advertising circulars—the real evidence—rests on the shoulders of one—or at most two—poor little mice.

It is wrong for any one to belittle the efforts of scientific workers. Far be it from us to do so. This work of Baird's is most important, but there is no evidence that it is more than suggestive, and it is wrong for a scientific man to say that an experiment proved what he knew it would and that the result will invariably be the same. He should not say so, at least until he has more than one instance to prove it. It is wrong

for a great and influential paper to publish such extravagant statements, particularly on such an important subject. It is wrong, too, for a respected firm to get out literature such as we have recently been receiving.

Many human lives are sacrificed on the altar of every new cancer "cure," which becomes widely and popularly exploited. How many lives this article in *Harper's Weekly* must answer for may never be known. There are today physicians, all over the country, injecting trypsin into cancers—in some instance probably where an operation would mean a life saved—and they are doing it on the testimony of one white mouse.



MILK CHARITIES.

A very important part of our present day philanthropy is the various movements to improve the conditions of the poor during the first year of life and so lessen both the unnecessarily high infant mortality and also the abnormal development of the surviving portion of the race. Statistics show that good results have followed the work of the past few years. Without question, one of the most successful efforts, has been that of supplying suitable food in this age, when so many mothers are unable to nourish their offspring.

Institutions for furnishing pure, fresh, properly prepared milk for babies and means for instructing the mothers in some of the first principles of maternity have become an established feature in the charity work of many of the larger cities in this country and abroad, and in several instances have come under municipal control. It was through the efforts of two men of France, Doctors Dufor and

Variot, that men and women first found inspiration to labor in behalf of the infant, resulting in the organization of the now famous *Gouttes de Lait*.

Dr. Geo. W. Goler, Health Officer of Rochester, N. Y., in a paper, read before the First International Congress of the *Gouttes de Lait*, Paris, October, 1905, said that it is now a little more than fifteen years since the establishment of the first milk station in France. These years of work have shown marvelous results. From France, similar institutions have spread throughout the world until now nearly every civilized country has either established work along similar lines or has felt the influence of what has been accomplished by their neighbors.

To Dr. T. M. Rotch, of Boston, the originator of the percentage method of infant feeding, must be given the credit for the pioneer work in this philanthropic movement in the United States. Very shortly after the establishment of the first *Gouttes de Lait*, the Boston Milk Fund Association began its work. Since then, in our own country, milk charities have been established in New York City, Rochester, Chicago, Baltimore and Detroit. Others are being organized.

The Boston Milk Fund is supported by the general public. The mother takes her infant to one of the hospital dispensaries where it is examined by the physician in charge and a proper order on the milk laboratory given. This prescription is marked "Milk Fund," which indicates that the mother pays what she can afford and the charity does the rest. This milk used is the pure, clean, scientifically prepared milk furnished by the Walker-Gordon Company.

The Straus Milk Charity of New York is the result of the liberality of Mr.

Nathan Straus. It furnishes from milk stations in various parts of the city, pasteurized milk, from the best source possible, for infant feeding, without the added cost that such production usually involves. Since 1898, Rochester has conducted Municipal Milk Stations and more recently, Chicago, Baltimore and Detroit have taken up the work, along one or the other of these lines.

Just about a year ago, the Detroit Milk Fund was organized with Dr. C. G. Jennings as Medical Director and a Board of Trustees, composed of young married women. The following appeal was sent to those whom it was thought would support such a charity:

"The Trustees of the Detroit Milk Fund appeal to the citizens of Detroit and vicinity in behalf of the sick babies who will be recipients of their charity. * * * * *The very large mortality among infants which follows as a result of diseases induced by hot weather and by infected milk is exceptionally high in this city. This condition can be greatly improved by a proper regulation of the milk supply and by a proper modification of the milk on which these babies are fed.

"The charity is practical, wholly unsectarian, will be economically dispensed and prompt in its application. It has the endorsement of a large number of the most representative physicians and women of Detroit.

"The babies who are to be recipients of the Milk Fund will be continually under the care of the physician in charge of the different hospital dispensaries. The record of each will be kept and none will be permitted to remain upon the list unless the physician in charge of the case sees his patient every week. The people whom this charity benefits are ex-

pected to pay what they can afford, so that the charity is in no way a pauperizing one."

The appeal was made doubly impressive by the disclosure of the high infant mortality existing in Detroit. *This exceeds that of any other city in the North, equally large, with the single exception of Philadelphia.* As Detroit is a clean city with a safe water supply, a temperate climate, and no crowded tenement district or labor problem such as confronts New York City, there could only be one explanation for this high mortality—the bad milk supply, together with ignorance on the part of mothers.

Objections made to this charity, were that it might pauperize the people by giving something for nothing and that the milk would be used by a lot of children who had better die anyhow. The recipients of this pure milk were truly grateful. Those who were able to do so paid what they could afford. The majority were willing to pay 5c per day, the usual price of store milk, some considerably more. In regard to the second criticism, it is unworthy of an answer.

In most instances, milk charities have been organized as separate establishments, as the Straus charity of New York City, or have been conducted in connection with hospitals or dispensaries, as in Chicago, Baltimore and Detroit. This is without doubt, the way most of this work will be carried on for some time to come, but "since it is one of the duties of the State to provide means of curing disease, why is it not within its province to furnish the agents of its prevention?" Thousands of infant lives are needlessly sacrificed annually because of impure milk. *No system of milk tests or examination now in operation, capable of*

being generally applied, is sufficient to protect the lives of young children against the noxious germs present in a large portion of the milk delivered in our cities. Even with the most rigid methods of inspection, it has been shown that a sufficient number of milk dealers cannot be found whose milk will come up to a safe standard for infant feeding. So long as this is true, the whole milk supply of every city should be under Municipal Management and control and special arrangements should be made for dealing with the milk intended for infant consumption. Rochester is setting the example which other cities should follow.

The Detroit Milk Fund is now beginning its second season of work. It should have hearty support both from the profession and the laity.

Book Notices

A Memoir of Dr. James Jackson.—By James Jackson Putnam, M. D. Cloth, octavo; 456 pages; 30 illustrations. Price \$2.50 net. Houghton, Mifflin & Company, Boston and New York, 1906.

Too little enthusiasm has been given to the study of American Medical History, and in consequence, medical biographies are few in number. We welcome every book which will place before us the facts in the lives of our pioneer practitioners and teachers, for each addition not only enriches the history of medicine in America, but it also serves as an inspiration and a help.

No more delightful biography has appeared than that of Dr. Jackson, of whom Oliver Wendell Holmes said: "James Jackson, a man of serene and clear intelligence, not over book fed, truthful to the center; a man who forgot himself in his care for others and his love for his profession; by common consent, recognized as a model of the wise and good physician."

Part I., comprising about one-third of the book, is given up to the genealogy of the Jacksons and to short biographies of the four talented brothers who lived in and about Boston. Part II. concerns Dr. Jackson, and his eminent confreres, the most notable of whom was John Collins Warren, between whom and the subject of the

biography, there was the closest intimacy for many years.

An interesting account of Jackson's student days in Europe is followed by an account of his return in 1800, when he did much to popularize vaccination which had been introduced into New England a few months previously by Dr. Waterhouse. In those days advertising in the papers was not *infra dig*, and the following quaint "liner" appeared in the *Columbian Centinel* in October, 1800: "Dr. Jackson informs the public that he has at present a supply of cowpox and inoculates for the disease."

Much interesting and instructive matter is presented, bearing on the early years of the Harvard Medical School, in which Dr. Jackson was the first professor of Clinical Medicine (1800). Indeed, we believe, he was the first to hold this title in America.

The Massachusetts General Hospital was opened in 1821 and Jackson was prominent in its inception, construction and organization. It was of his daily visits there that Holmes wrote: "I have seen many noted British and French and American practitioners, but I never saw the man so altogether admirable at the bedside of the sick as Dr. James Jackson. To visit with Dr. Jackson was a medical education."

The great grief of Jackson's life, the death of the talented James Jackson, Jr., is pathetically related and many new facts concerning the son are given.

Jackson died in 1867.

No one can read the memoir of one of America's most eminent practitioners without feeling the inspiration which ever comes from learning the facts in the life of an ardent and honest man. Were it widely read, our profession would not be the loser.

The book is admirably illustrated, the portraits being for the most part, photograveurs.

Nervous and Mental Diseases.—By Archibald Church, M. D., Professor of Mental and Nervous Diseases in the Northwestern University Medical School, Chicago, and Frederick Peterson, M. D., President of the State Commission in Lunacy, New York, etc. 937 pages, 341 illustrations. Fifth edition, thoroughly revised. Cloth \$5.00, sheep \$6.00. W. B. Saunders & Co., Philadelphia.

That the favor with which this work was first received in 1899, has not waned, a fifth edition within seven years amply attests. The whole has been thoroughly and carefully revised and presents 100 more pages than were contained in the first edition. It is not by large or notable additions that the book is changed, but here and there its English is made more clear; a para-

graph is amplified here and a chapter there, so that this edition is brought thoroughly up to date. The scholarly touches given it make this later edition a distinct advance upon those which have preceded it. New illustrations, new tables, and added matter in various parts greatly improve the work. Dr. Peterson hesitates to accept all of Kraepelin's teachings and rather protests against abandoning mania as a distinct entity; but he adds chapters upon Manic-depressive Insanity and Dementia Praecox. The section upon mental diseases, while not exhaustive, is clear and practical.

The style of the whole is at the same time scholarly, terse, and eminently practical and the work will find a welcome place upon the shelves of all who desire an up-to-date text-book upon Nervous and Mental Diseases.

A Text-Book of Diseases of Women.—By Barton Cooke Hirst, M. D., Professor of Obstetrics, University of Pennsylvania. Second edition, revised and enlarged. Octavo of 741 pages, with 701 original illustrations, many in colors. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$5.00 net; sheep or half morocco, \$6.00 net.

Hirst's "Text Book of Gynecology," which appeared in 1903, was instantly recognized as an admirable one and the demand for it necessitated a reprint very soon after the first copies appeared. After waiting some two years, in order that newer material might be incorporated, a revision was undertaken and this second edition is even better than the first.

The feature of the volume which will directly appeal to the profession in general is the special attention which has been given to those methods of treatment which can be carried out by him who is not a specialist and who does not do operative work.

Indeed, throughout the book great stress has been laid upon diagnosis and treatment, and the section devoted to a detailed description of modern gynecic operations is without doubt the most clear and concise we have yet read. In this second edition the revision has been thorough, introducing, however, only such matter that promises or has been demonstrated to be of permanent value. Forty-seven new illustrations have been added and thirty of the old ones replaced, the work now containing a collection of seven hundred and one beautiful original illustrations, many of them in colors. We take much pleasure in recommending Dr. Hirst's work to the medical profession generally.

The Medical Diseases of Infancy and Childhood.—By Alfred C. Cotton, A. M., M. D., Professor of Pediatrics in Rush Medical College. Cloth, 670 pages, 219 illustrations. \$3.50. J. B. Lippincott Company, Philadelphia.

The latest addition to the large number of works on pediatrics which have recently appeared is that by Cotton.

To cover the medical diseases of infancy and childhood in 600 pages is a difficult task. Of necessity, differences of opinion must be omitted and the ideas of the author given somewhat dogmatically. This makes excellent reading for students, because the mind is not confused by conflicting statements. Cotton's style impresses one rather as authoritative than as dogmatic.

It is to be commended that a relatively large proportion of space is devoted to the anatomy, physiology and hygiene of the developing period.

The book is systematic, taking up the various topics in regular order. It is well indexed and well printed. As a short treatise on the subject, the work is to be recommended.

International Clinics.—Vol. I., 16th Series, 1906. 309 pages, 7 fig., 29 plates, 9 of which are colored. Cloth. Price \$2.00. J. B. Lippincott Company, Philadelphia.

The articles in this number of the International Clinics are even better than usual. The volume opens with five articles on treatment. One of the four articles on medicine is that on "The Origin and Preventive Treatment of Oxalic Acid," by Professor Klemperer, of Berlin. It is short but particularly good.

A readable and important contribution is that by Cumston on the "Importance of the Pulse in Surgical Disorders."

The progress of medicine during 1905 is reviewed by Stevens, Edsall and Bloodgood, in a concise yet practical manner.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology.—By George F. Butler, Ph. G., M. D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago. Fifth edition, thoroughly revised by Smith Ely Jelliffe, M. D., Ph. D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia College (College of Physicians and Surgeons), New York. Octavo of 694 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$4.00 net; half morocco, \$5.00 net.

For this fifth edition Dr. Butler's text-book has been entirely remodeled, rewritten, and reset, bringing it in accord with the new (1905) Pharmacopeia. All obsolete matter has been eliminated, and special attention has been given to the toxicologic and therapeutic effects of the newer compounds. We notice with much satisfaction

that the general arrangement of the book has been so changed that those drugs the predominant action of which is on one system of organs of the body are grouped together, thus suggesting their therapeutic as well as their pharmacologic, alliances. We believe this classification to be more thoroughly practical and useful than any other. By use of a more compact type the work has been reduced in size. It is a pleasure to us to recommend this book to the profession, for it is no doubt the most thorough, and in every way the best on the subjects it includes.

The International Medical Annual—1906, 24th year. Cloth, 572 pages, illustrated. Price \$3.00. E. B. Treat & Company, 241 W. 23rd st., New York City.

Treat's Annual is a resume of the year's medical literature and as such is a distinct help in many ways. The editors are for the most part Britishers and the articles quoted are largely British. The alphabetical arrangement makes ready reference easy. These annuals are too well known to require recommendation.

Books Received.

Nervous and Mental Diseases. By Archibald Church and Frederick Peterson. W. B. Saunders & Co.

A Text Book of Diseases of Women. By Barton Cooke Hirst. W. B. Saunders & Co.

International Clinics. Vol. I. 16th Series. J. B. Lippincott Co.

Infection, Immunity and Serum Therapy. By H. T. Ricketts. American Medical Association Press. (Notice next month.)

Diseases of the Nervous System Resulting From Accident and Injury. By Pierce Bailey. D. Appleton & Company. (Notice next month.)

A Primer of Psychology and Mental Disease. By C. B. Burr. (Notice next month.)

Reports

THE AMERICAN CONFEDERATION OF RECIPROCATING, EXAMINING AND LICENSING MEDICAL BOARDS.

Report furnished for the JOURNAL by B. D. Harison, M. D., Secretary.

Meeting held at Columbus, Ohio, April 25, 1906. Dr. W. A. Spurgeon, President, Muncie, Indiana, in the chair. Dr. B. D. Harison, Secretary, Detroit, Michigan.

Report of Committee on Uniform Entrance and Graduation Requirements.

This Committee recommended as a substitute for Entrance Requirements to Medical Colleges, adopted at the Indianapolis meeting, 1905, the following: After July first, 1906, the minimum requirement for registration in a medical college shall be a recognized diploma from a four year high school, academy, college or university, or a recognized equivalent certificate, such diploma or certificate having the following minimum standard:

Academic Work and Examinations 60 counts.
Required 30 counts. (After 1906 35 counts.)

(A list of the counts in each subject is here given.)

A count to represent a recitation once a week for a school year. A diploma to be granted only after a recognized four year course. Conditions not to exceed a total of 15 counts.

Report was adopted.

NOTE.—The above schedule had been previously adopted by the National Curricula Committee of the Association of American Medical Colleges.

Report of Committee on Modifications in Reciprocal Qualifications.

This Committee reported:

The following substitute under (A) "Prerequisite Credentials," adopted April 27, 1905, at Indianapolis.

As a prerequisite to reciprocal registration the applicant therefor shall file in the offices of the boards of the state of which he is a licentiate and the state where reciprocal registration is sought, such evidence of good moral and professional character as may be demanded by said boards, and such evidence at the discretion of either board may include proof of membership and good standing in a recognized medical society, and such membership may be considered in connection with the other evidence of character presented.

That the requirement under (B) of an affidavit relative to the abandonment of practice in the state from which applicant came, to be stricken out. Likewise the comments upon Qualifications "A" and "B" in the 1905 minutes to be stricken out.

That in Qualification No. 1 adopted by the Confederation at Indianapolis, April 27, 1905, the words "and provided that the applicant had been engaged in the reputable practice of medicine at

least one year in the state issuing the certificate upon which endorsement is sought" be stricken out.

The Committee recommended the recognition of a primary or junior board examination at the completion of the second year in a recognized medical college as follows.

That a certificate issued by a state medical board covering credits received in a primary or junior examination by said board may be received and given credit by the board of another state, provided such primary or junior examination shall only include the following subjects, which must have been completed to the end of the second year at least in a recognized medical college, in accordance with the Standard Medical Curriculum of the Confederation, namely:

Anatomy,
Physiology,
Chemistry,
Toxicology,
Histology,
Embryology,
Bacteriology.

Report was adopted.

Report of Committee on Advanced Standing.

This Committee reported:

The following substitute under first of the minutes of the 1905 meeting at Indianapolis is recommended:

That graduates holding the degrees of A. B., B. S., or equivalent qualifications, from a recognized college or university, may be given credits not exceeding one year, provided the applicant for such credits shall produce evidence which shall satisfy the state board of medical examiners in the state in which credit is asked, that the holder of such degree has taken within ten per cent of the work embraced in the minimum standard of requirements of the American Confederation of Reciprocating, Examining and Licensing Medical Boards in the following subjects:

Bacteriology,
Histology and
Embryology,
Osteology,
Comparative Anatomy,
Physiology,

Chemistry and Toxicology.

And provided, that any literary college which shall undertake this work shall in its catalogue announce that it will give this first year of a medical course.

The report was adopted.

Report of Committee on Uniformity of Forms.

This Committee reported:

The Committee would recommend a uniformity in reciprocal license application blanks, and that the following requirements at least be considered essential:

(a) A question which will reveal the past conduct and proposed attitude toward engaging in itinerant practice or objectionable advertising business.

(b) A comprehensive physical description sworn to by applicant and endorsed by those who make affidavits, as to his moral and professional standing; affidavits by applicant to be positive, instead of "to the best of his knowledge and belief." Intended residence not necessarily required.

(c) A certified copy of license which is used as a basis for reciprocity.

(d) A detailed statement of preliminary and medical college education.

The Committee would further recommend that a Committee be appointed to continue the consideration of this subject and report more fully at the next meeting.

The report was adopted and the Committee continued.

The President appointed the following Executive Committee, which shall include the President and Secretary:

Dr. Moses S. Canfield, Indiana; Dr. J. V. Stevenes, Wisconsin; Dr. George H. Matson, Ohio.

Dr. W. A. Spurgeon, Indiana, was re-elected President.

Dr. B. D. Harrison, Michigan, was re-elected Secretary.

The President in his closing address emphasized the point that the work of the Confederation was purely educational, and its resulting standards, qualifications and regulations were merely suggestive and intended as a guide and in the interest of uniformity rather than mandatory upon boards who held membership in the Confederation. The boards, however, were naturally expected to live up to the ideals of the Confederation in as far as their laws and local conditions permitted. He acknowledged the indebtedness of the Confederation to the very valuable assistance rendered by the Ohio State Medical Board, the Faculty of the Ohio State Medical University, and the visiting Deans of other Medical Colleges throughout the country in contributing to the success of the meeting by their presence and advice. He also especially referred to the great assistance rendered the Confederation by Pro-

fessor Charles F. Wheelock, representing the New York Board of Regents, and Dr. Fred C. Zapffe, Secretary Association of American Medical Colleges.

Notes From Report of Secretary.

The following states are members of the Confederation: Michigan, Wisconsin, Indiana, Iowa, Kansas, Kentucky, Nebraska, Maryland, Georgia, Illinois, Ohio, North Dakota, Nevada, Oklahoma.

The following states have joined the Confederation since May 1, 1905: Nevada and North Dakota.

The following states reciprocate under Qualification No. 1 only: Illinois, Ohio, New Jersey, North Dakota, Virginia, Wyoming and South Carolina.

The following states reciprocate under Qualifications 1 and 2: Michigan, Wisconsin, Indiana, Iowa, Kansas, Nebraska, Maryland, Minnesota, Vermont, Missouri, Nevada, Maine, Georgia and District of Columbia.

During the past year, as far as reported, 386 Certificates of Registration and Licenses were issued under Qualification No. 1, and 35 under Qualification No. 2, and 67, qualification not designated. Total under both qualifications, 488.

Total number of Licenses issued by thirteen states through reciprocity 720, of which 501 were issued under Qualification No. 1, 77 under Qualification No. 2, and 142, qualification not designated. No report received from nine other reciprocating states.

It will be noted that the following states reciprocate practically under the qualifications of the Confederation, although not actually members of the Confederation, but probable members in the near future: Minnesota, Vermont, Missouri, New Jersey, Maine, Virginia, Wyoming, South Carolina, District of Columbia and South Dakota.

Ohio reciprocates at the present time under Qualification No. 1 only, but recently has obtained an amendment from her legislature allowing for reciprocity under both Qualifications Nos. 1 and 2.

Maine has also recently obtained a similar arrangement.

Since the last meeting of the Confederation, Vermont has obtained from her legislature power to reciprocate under both Qualifications 1 and 2.

Michigan reciprocates with Wisconsin, Indiana, Iowa, Kansas, Nebraska, Maryland, Minnesota, Nevada, Maine, Vermont and Georgia under Qualifications Nos. 1 and 2, and with Illinois, Ohio, New Jersey, North Dakota, South Caro-

lina, Virginia and Wyoming under Qualification No. 1 only, and with District of Columbia in individual cases.

County Society News.

DELTA.

At the autumn meeting of the Delta County Society the following paper was read by **Dr. H. W. Long**, of Escanaba:

EDUCATION AS A FACTOR IN THE PROPHYLAXIS OF VENEREAL DISEASE.

H. W. LONG, M. D., Escanaba.

As an introduction, it is well for us to know a few facts regarding our subject, and the necessity for some action toward the prevention of the spread and the suppression of venereal diseases. One-eighth of all human suffering is placed at the door of venereal disease. Between eighty and ninety per cent of men sometime in their lives contract gonorrhea and twenty per cent syphilis. Eighty per cent of deaths of women due to pelvic diseases are traceable to venereal infection. Twenty per cent of the blindness of infancy is caused from gonorrhea. It was eighty per cent previous to the institution of the Crede method of protecting the eyes at birth.

With this enormous percentage of venereal disease and few attempts to stop its progress, has not the time approached when active steps should be taken to combat it? Prostitution being the fountain head of eighty per cent of venereal disease we should give this subject our first attention. As prostitution has always been and will always be, it is useless for us to spend our time arguing for its elimination. It is an inevitable condition, although not to be encouraged. Regulation of prostitution has been attempted in many of the European countries and it is still in vogue in a few, but not with much success. Strict surveillance has proven a detriment rather than a benefit to this class. Therefore we must seek other methods of dealings with them. Let us educate these people. Instruct them in the dangers of infection, the results, and the great harm they may do in their position. Demonstrate to them the methods used to prevent inoculation, the care required when infected, and the necessity of a positive cure before resuming their habits. More effective results can be derived by education and improvement of sanitary conditions than by stringent laws and violent measures.

In the line of education, let us turn our attention to the physician as an indirect cause toward the spread of venereal disease. It is estimated that twenty per cent of physicians do not know when a case of gonorrhea is cured or when a syphilitic is considered non-infective. I have stated that eighty per cent of all venereal disease is contracted from prostitutes, I believe, that nearly all of the remaining twenty per cent can be traced to non-cured or latent forms of the disease, that have been pronounced cured or non-infective. This reaches the class that contract them innocently, namely, wives from their husbands, children from their parents or nurses, physicians from their patients and patients from their physicians and dentists, through infected instruments, soiled towels and dirty hands. Physicians should use greater care in treating their patients, and be more guarded in giving their decision on the cure of these infections, and should better familiarize themselves with their complications, in order that they may determine when the condition is cured.

Having passed on these two important topics as to the source of these evils let us consider what can be done toward their prevention by the instruction of the laity. Education of the masses is the most potent factor in the subject of prophylaxis. This will, undoubtedly, be a slow process, but will, nevertheless, meet with good results. It is a delicate subject and must be handled with tact to be effective. The physician from his intimate relationship with the family must assume the responsibility of instructor and adviser, he can by his knowledge and influence prevent many a youth from being misled, his health ruined, and posterity impaired.

There are several courses for us to take to make this task successful, of which I will note a few.

High School Instruction. Physiology as taught in our schools falls far short of its purpose and is both incomplete and misleading. It is taught by incompetent teachers and important topics are omitted. Physiology should be taught in the high schools by physicians who are able to impart their knowledge sufficiently clear and plain to be comprehended. Thorough instruction in sexual hygiene and the dangers of venereal diseases should be given to the respective sexes. This subject is too often overlooked and should be taken up at that time of life when most beneficial and not after the crime has been committed. I refer to physicians as teachers as they can converse and impart their knowledge with greater frankness and less timidity than a teacher or a parent.

College Instruction.—Teaching in higher insti-

tutions is also necessary. Classes on venereology and sexual hygiene have been instituted in several universities, the only one in this country to my knowledge being our own state institution. These classes have met with great success, and are well attended. In this connection I believe some good may result from the compulsory education on this subject in prisons, industrial schools, and other public institutions. The physician should endeavor to gain the confidence of the boys in the families he attends and talk to them on this subject, that they may know the truth and not grow up in ignorance or far worse, to be misled by the teaching of their associates.

Parents ought to talk to their boys, yes, and girls too, more freely, and if they are too timid, advise them to go to their family physician. Literature on venereology and sexual hygiene by recognized authority and distributed by the State Board of Health similar to those published by that body on other infectious diseases will be very effective. And here I desire to refer to Dr. Valentine's treatise on this subject which was given in part in the *Journal of the American Medical Association*, under date of July 4, 1905. These reprints should be copied and distributed freely, as the author has covered the subject very thoroughly and in a masterly manner. This literature would replace that of the blood and thunder type, patent medicine advertisements, and others poisonous to the mind, which, undoubtedly, have their effect to produce more evil and indirectly the spread of disease.

Legislation should be instituted prohibiting the publishing and distributing of this class of reading as well as the selling of patent medicine nostrums, and drugs. These are sold by people who are not familiar with the conditions which they claim for their remedies and the result is the development of chronic conditions which are far more dangerous than the original ailment.

Our hospital authorities do not recognize the outcome of negligence in the early stages of venereal diseases and the future suffering that may be obviated by prompt attention and proper care. They close the doors on these unfortunates, stating: "We cannot admit you now, but come around when your disease has developed into gonorrheal prostatitis or nephritis or your syphilis has caused cerebral tumor, locomotor ataxia, or gummatous destruction of your vital parts." Why should we not demand the same regulations for these, the most dangerous of infectious diseases as for small pox, scarlet fever, measles, etc.? The mortality is higher.

We will now give our attention to personal

prophylaxis. In this we come nearer reaching the goal of our efforts than from all other methods. Personal prophylaxis has made great advances in the last few years and has proven of unquestionable value. In circumcision, the danger of venereal infection has been reduced as proven by the records which show that Jews suffer from venereal diseases less than others. This operation is to be recommended in early infancy, but under more aseptic conditions than the Jews' method which, unfortunately, is one source of venereal disease in that race. The use of the condom as a preventative is worthy of a more general use. As mercury is so very antagonistic to syphilis, Buchman advises the use of unguentum hydrargyri as an application before coitus, thus acting as an antiseptic film.

In gonorrhea, the nitrate of silver acts as the antidote and, although not as specific as the mercury, has given good results. It was used as an injection before and after coitus, but owing to its irritating qualities was replaced by the silver salts, protargol and argyrol being the most popular. Protargol in a 20% solution will destroy the gonococcus in five seconds, but as this is too strong to use in the urethra, Frank recommends the instillation of a 10% solution in glycerine. Argyrol, being entirely free from any irritating qualities and much higher in per cent of silver, has of late replaced all other silver salts and given excellent results, being used in as high as 40% solution. This, in the hands of a patient or individual with a box of mercurial ointment, will prevent many a person from venereal infection and ought to be recommended, as it is perfectly safe in the hands of everyone. If every prostitute was supplied with these preventatives, we could surely get nearer the source of danger and confine it to its present limits.

The objection to this procedure is, Is it wise to give this instruction and place these preventatives at his disposal or should he be allowed to grow up in ignorance and sooner or later meet with these pitfalls? I say, Instruct him first, then if he chooses, he does so with some knowledge of his acts, and has only himself to blame; otherwise, he acts blindly and is to be pitied.

In concluding, I would emphasize these points.

First: Education of prostitutes as to the care of themselves and as to the prevention of disease.

Second: More care exercised by physicians in treating their venereal cases and their discharge only when cure has been effected.

Third: Proper teaching of physiology in high schools and by physicians.

Fourth: Obligatory instruction of venereology in higher institutions and in prisons, industrial schools, and other public institutions.

Fifth: Distribution of literature on sexual hygiene, dangers of venereal diseases and preventative precautions for same, written by good authority and distributed by the State Board of Health.

Sixth: Suppression of advertising sheets and other printed matter poisoning to the mind of the youth.

Seventh: Opening of hospitals and dispensaries for the care and treatment of venereal diseases in their early stages.

Eighth: Instruction for individual prophylaxis. a. Circumcision. b. Use of the condom. c. Medicinal measures.

KALAMAZOO ACADEMY OF MEDICINE.

At the April meeting of the Academy, the following paper was read by **Dr. Edward J. Bernstein**:

EAR CONDITIONS OF INTEREST TO THE FAMILY DOCTOR

The time has long since past when the dictum is true, that "Those ear troubles which can not be cured by an ear syringe or a politzer air bag, are practically hopeless." Fortunately for Otology this reproach no longer stares us in the face. While both these instruments are very useful, nay even indispensable to us, their indiscriminate use is often harmful. Especially so, is this the case of the latter.

The proper appreciation of the very serious obligation which the family doctor daily assumes in his conflict with children's diseases, more particularly in the acute febrile disorders, and the helpfulness of the modern otologist, have done much, and will do more, to reduce the number of deaf persons. I wonder if as many men as ought, appreciate the fact that blindness—dreadful as is that affliction—causes less misery in the world than ear troubles! I venture to say that more people end their existence, many times over on account of their helplessness from this, than from loss of sight. We all know the proverbial cheeriness of the blind and the moroseness of the deaf. We aurists believe that with the proper co-operation of the family doctor, we can do almost as much to eradicate deafness as we have done to reduce blindness from ophthalmia neonatorum.

The readiness with which the ear can be examined and the necessity for such, should hardly call for a word, were we not all aware how easy it is to neglect things in the rush of practice and the disinclination to incur the ill will of the sick child by annoying it, when it is already fretful and cross. This, on the one hand and the interference of the well intentioned, but meddlesome neighbor on the other, often prevent one from doing his full duty. We who have had experience in general practice, can appreciate this fully.

A word as to the method of examination of the child's ear. Whereas in the adult, we pull the auricle upward, outward and forward, in order to see the drum, this would but serve to close the canal more fully in the child; it is therefore necessary to pull the auricle downward and outward. Just as necessary as is the regular examination of the urine, so is the routine inspection of the drum in every case of measles, scarlet fever, diphtheria, influenza and whooping cough, even though there be no complaint of pain in the ears. For while such pain does often proclaim ear complication, the number of such instances is very small, as compared with the number in which the first evidence is the appearance of discharge on the pillow. Often, in young children, even when the ear is looked after, the actual state of things may be misinterpreted by the inexperienced, as the drum may be white and prominent and not show the intense congestion going on. This (whiteness) is due to the great pressure in the tympanic cavity, causing an exfoliation of the epidermis of the membrane. A cotton tipped probe very gently wiped over its surface will brush this exfoliated epithelium away and show the reddened bulging condition beneath (McKernon).

When a bulging ear drum is found, with or without great pain, it is little short of criminal carelessness to permit the little patient to undergo these terrible tortures more than twelve or eighteen hours, in the hope that they will subside or burst spontaneously. If any one of us had to undergo such tortures *once* he would readily accede to this proposition. To hail spontaneous rupture, after days of agony, with the acclaim, "Well, it was lucky that it burst outward and not inward, for if it had the child would have died of meningitis" is worthy of the middle ages. Buerkner, testing the claim that myringotomy was not necessary in most cases, determined to try fifty cases, but after he had witnessed the agony entailed in 30 or 40, had not the heart to continue his experiment. When nature came to the relief of pain, she did it imperfectly as

often as otherwise. The opening was made at the top, in the membrana flaccida or elsewhere, and usually it was a pin hole, which but hindered free drainage and tended to render the condition chronic, with the subsequent loss of hearing as an assured thing and the possibility—not very remote either—of necrosis of bone or the formation of masses of cholesteatoma, which latter, if given time enough, will erode the bone till communication with the cranial cavity is established.

It has been abundantly proved by actual trial, that when the drum is opened artificially, the patients get well so much earlier than when left to nature. Nearly half of the incised cases were well in five days and within the first twenty days the results stood 90.5% for the incised and 43.5% for the spontaneous. In the former but 3% of functional disturbances and in the latter 12% were observed. If it is not easy to get an aurist to do this little operation for you, I am sure much the lesser evil would be, for you to take a large hagedorn needle, whose tip alone is exposed to within $\frac{1}{8}$ of an inch and carry it down along the posterior and lower wall till you hear a click—which tells you that you have perforated the tympanum. This is to be followed by warm douches of 1-5000 bichloride. I realize that this teaching may be construed by some as pernicious, but I believe it is infinitely less evil, than permitting nature to do the act any way. It goes without saying that the proper way is to do it under full illumination and with a properly constructed knife.

In any acute febrile disorder, when in the ordinary course of events, the temperature remains out of proportion to the condition or in the event of its subsidence, it undergoes a recrudescence, do not forget to watch the ears, for you will more than likely find the solution of the trouble there. The diseases in which this may supervene are the exanthemata, gastro-intestinal troubles, typhoid fever and la grippe.

Those individuals, who are subject to frequent attacks of tonsillitis and especially those children who sleep with their mouths open and snore a great deal at night and suffer from bed-wetting—which as you well know are the concomitants of adenoids—are especially prone to ear troubles, sooner or later—usually sooner. Needless to say neither adenoids nor hypertrophied tonsils disappear if left to themselves. Nothing short of a total eradication—root and branch—of these structures can be tolerated. Inasmuch as it is almost the rule to have some ear complication in most cases of measles and scarlet fever, and in

consequence of improper handling of these, deafness often results and inasmuch as deaf mutism is directly traceable to scarlet fever in various percentages from 15% in Italy to 42.6% in Saxony, I shall say a few words with especial reference to the ear complications of these diseases.

The otitis media of measles is usually suppurative and is ushered in with great pain, lasting till perforation occurs to relieve the patient, while in scarlet fever it often creeps on insidiously, so that the first intimation of ear trouble is the evidence of the discharge in the external canal. As a prophylactic measure, I deem it good practice to daily wash out the nose with warm saline solution—and let me add, that no proprietary article is one whit better than a simple solution or a pinch each, of bicarb. soda and table salt in a half cup of warm water. All other ingredients are worthless and only subject your patient to a needless expense, with no corresponding value. After washing out the nose as mentioned, the patient gently blows it, being careful not to hold either side shut—so as not to carry secretions into the eustachian tube. I have the attendant drop a few drops of a 1/2% sol. iodine or a 1/2% sol. nitrate of silver into the nares t. i. d., while the child is lying on its back.

The otitis of scarlet fever occurs in three forms, the acute catarrhal, the acute suppurative, and scarlatina-diphtheritic form. Much of the nature of the otitis will be due to type of epidemic, though it is without doubt that children with tough skin, with no adenoids or large tonsils, have less severe complications than those with thin skin and with such hindrances.

The acute catarrhal form is likely to come on in prodromal stage, at the time of, or shortly after, the appearance of the rash. It is accompanied with a sense of pressure and fullness, throbbing, and at times, some pain and rapid depreciation of the sense of hearing. This latter gradually improves after the drum is opened and is most often entirely restored during convalescence. It seems that the secretions which pass up through the tube, act as a curative serum and that the use of the syringe is especially to be avoided. It is much better to simply wipe out the canal with absorbent cotton. Until all throat symptoms have entirely cleared up, it is also most dangerous to use the politzer air bag, but after the second week when all throat symptoms have cleared up, then the cautious use of the air bag will clear up any deafness.

The suppurative form is ushered in with most

intense earache and heightened fever. Opening the drum promptly relieves all the symptoms, but should pain and fever not subside, we may be sure that the bone is more seriously involved, the soft parts are then seen to be swollen, the child assumes the characteristic attitude of wry neck and we often see symptoms which look like cerebral involvement—vomiting, convulsions, etc.—and the diagnosis of meningitis is incorrectly made. I should like to here remind you that these symptoms are apt to occur before the eruption and disappear as soon as the rash is well developed. It is important to constantly bear this in mind. It has a distinct bearing on the prognosis and treatment. For, in treating such a case, when one has to deal with faucial angina and consecutive ear suppuration with free flow of pus and these cerebral (?) symptoms intervene, one need not thereupon feel that meningitis has set in.

The course of the suppuration depends, in a large measure, upon the skill and care of the medical attendant. Prompt and thorough opening of drum gives not alone immediate relief, but also the best chance for restitution to normal. If the pyogenic process seems apt to get the upper hand, one must seek to annul such effect by killing off the pathogenic organisms in the tympanic cavity. The canal is syringed out with 1-5000 bichlorid, or what I believe to be better—1-400 iodine solution two or three times a day. After wiping out the canal with sterile cotton, very gentle politzerization, again wiping whatever secretions which well up from the tympanum and then a few drops of 1% solution of iodine in dilute alcohol are poured into the canal while the head is turned in the opposite direction, then pressing upon the tragus, get the patient to swallow when the fluid will enter the tympanic cavity and trickle down the eustachian tube. Treatment should be kept up till the secretions lose their purulent character. Danger to hearing and involvement of the mastoid are reduced to a minimum.

In the more violent form of suppuration, the so called scarlatinal-diphtheritic form, we have the most awful of ear conditions, for here we have not only mastoiditis in its worst form, but deaf-mutism and death intervene in the most incredibly short time. Strange to say the process does not begin with such fulminating symptoms as in the preceding variety, but creeps on insidiously. In from 36 to 48 hours the tympanum becomes macerated and the secretions foetid from necrosis of the deeper tissues; the ossicles are exfoliated by fatty degeneration and thrombo arteritis. Fortunately this picture is not common, but when it does occur it is perfectly appalling to find the

hearing vanish in a few short hours, if the process involve the labyrinth. Often this latter structure is involved and hearing abolished just as completely, without any appearance of suppuration. The trouble is carried either through the lymph channels or by the blood current directly into the labyrinth.

As for treatment, inasmuch as this form is a mixed infection, the prompt use of diphtheria antitoxin and the streptococcic serum is urgently indicated. This is to be combined with the aforementioned local treatment. For the labyrinthine involvement, the subcutaneous injection of muriate of pilocarpine, in doses ranging from 0.005-0.02, two or three times daily, provided the heart permits, should be used.

As to chronic suppurations a word—here again the dictum so often quoted that "it is a good thing for an ear to discharge" is veriest acknowledgment of either ignorance or laziness on the part of the doctor. Doubtless you may smile at my positiveness or that I should recall these fallacies to your attention, but it has not been so many years that such was the common advice given by doctors.

In truth, every running ear is a very sword of Damocles hanging over the head of the patient. No one can tell at what moment, especially in those exposed to cold weather, the storm may burst and a serious involvement of the meninges occur. We know only too well the gravity of this condition and yet while I tell you this, I am sure there are some among you who are mentally running over the list of those old men and women, who have been carrying a discharging ear almost from childhood with apparently no discomfort and relative immunity. This is true enough and is due to the fact that when otitis media occurs in early childhood, nature attempts to ward off danger by a process of sclerosing the mastoid, thus shutting off the cranial cavity from the tympanum. That one is on pretty thin ice who trusts to this, is only too apparent upon closer investigation. The only safe thing for these cases which resist careful and systematic treatment is the radical mastoid operation and this is demanded in every case, especially when a tendency to necrosis or polypus presents.

MONTCALM.

The meeting of the Montcalm County Medical Society was held in Greenville, April 12th. There was a larger attendance than usual and much in-

terest was taken in the papers read which elicited earnest discussions. Two new members were added to our roll of membership.

The next meeting will be held in Greenville, in October, in conjunction with the Eleventh Councilor District meeting.

H. L. BOWER, Sec'y.

OTTAWA.

At the last meeting of the Ottawa County Medical Society the following resolutions were adopted:

Holland, Mich., May 4, 1906.

Whereas, The American Medical Association, through its Council on Pharmacy and Chemistry, is engaged in the work of bringing to the attention of the Medical Profession the composition of the various nostrums and proprietary medicines which are on the market and advertised extravagantly and fraudulently to the profession; and

Whereas, The interests concerned in the manufacture and sale of these nostrums are spreading literature throughout the country and are doing everything in their power to defeat the work of the Council on Pharmacy and Chemistry; and

Whereas, The American Medical Association, through the editors of the "Councilors' Bulletin," has asked for an expression of the attitude of the different county societies, the component parts of the A. M. A.; therefore, be it

Resolved, That the Ottawa County Medical Society of the State of Michigan, hereby expresses its approval of the work that has already been done in this regard and agrees to help in every local way possible this educational campaign; and further

Resolved, That the members of this Society shall refrain from prescribing any of the nostrums which have been analyzed and rejected by the Council, and that they shall seek to profit by the articles published in the Journal of The American Medical Association under the head of "The Pharmacopeia and the Physician"; and, further

Resolved, That the Society extends its thanks and earnest commendations to "*Collier's Weekly*" and "*The Ladies' Home Journal*" in their campaign against "The Great American Fraud," and promises its support in their work in this direction; and further

Resolved, That copies of these resolutions be sent to the "Journal of the American Medical Association," "The Journal of the Michigan

State Medical Society," "Collier's Weekly" and "The Ladies' Home Journal."

B. B. GODFREY, M. D.,
E. D. KREMERS, M. D.,
Committee.

SAGINAW.

At the regular quarterly meeting of the Saginaw County Medical Society, held on May 1st, the following program was presented:

"Diseases of the Heart," Dr. W. J. O'Reilly;
"The Treatment of Pneumonia," Dr. Arthur Grigg.

It was voted that the Society meet monthly instead of quarterly.

P. S. WINDHAM, Sec'y.

WAYNE.

General Meeting, March 5, 1906. **Mr. Hugo Lieber**, New York, delivered an address: "**Radium and Its Emanations—with Demonstrations.**"

The theory that radium itself discharges three kinds of rays, which have been called the alpha, beta and gamma rays, was soon found to be incorrect by Professor Ernest Rutherford, of McGill University, Montreal, who discovered that radium itself primarily discharges only the alpha rays. It is a well-known fact that the emanations precipitate upon all matters with which they come in contact a radio-active deposit, thereby creating what is called radio-activity. This radio-active deposit decomposes very readily, losing almost its total activity within twenty-four hours. The radio-active deposit consists of three radio-active products, which, for convenience, have been called by Rutherford radium A, B and C.

When radium A, B and C decompose, there always remains a slight radio-active residue. The activity of this residue grows continually, discharging as well the alpha as also the beta rays. This radio-active residue consists again of three radio-active products which have been called radium D, E, and F. D is supposed to be non-radiating, therefore not radioactive, a product which decomposes very slowly (one-half in about forty years), and the decomposition of D produces E, which discharges only beta rays and which decomposes within about six days to one-half, whereby F is created. F discharges only

alpha rays. The alpha activity of F grows continually and achieves its greatest activity in about two or three years. F decomposes to one-half in 143 days.

D, E and F are soluble in acids, and if rods or discs of bismuth are dipped in this solution, they become very powerfully radio-active. The activity of these rods and discs must be attributed mainly to a radium F deposit and therefore is to be ascribed mainly to the alpha rays. As the same data have been found to apply to the radio-tellurium of Marckwald, there is hardly any doubt that this radio-tellurium and radium F are identical. F itself is probably 3,200 times as radio-active as the same quantity of pure radium. The difference as to the subsequent discharge of radiations and emanations by radium, which is of such great importance to the physicists, seems to be of minor practical importance to the physician upon superficial examination. However, this is not the case. Formerly, radium was used or applied only in containers consisting of glass, aluminum, hard rubber, etc. Now it is a well-established fact that the emanations as well as the alpha rays possess, practically speaking, no penetrating power, as they are not even able to penetrate tissue paper, the beta rays are of considerable penetrating power and the gamma rays of enormous penetrating power. Therefore, if we apply radium in the containers used up to a short time ago, we can avail ourselves solely of the beta and gamma rays as the alpha rays and emanations are unable to penetrate the walls of the container. As thereby we are losing more than 85% of all the radiations and as we are unable to utilize the emanations in that form, it had been my desire to obtain or prepare radium in such form that we have access to the alpha rays and the emanations as well as to the beta and gamma rays without running the risk of losing or damaging the radium itself.

After long experiments, I succeeded in producing what has been termed "radium coatings" in the following manner:

I dissolve radium in a proper solvent, which solvent must be changed in accordance with the matter to be coated. In this solvent I dip rods, discs, instruments or any other matter which is to be used for a given purpose. I use preferably celluloid, hard rubber, etc. The solvent is so composed as to somewhat soften the surface of the instrument to be coated. If I therefore withdraw the instrument from the solution, same will have adhering to it, as far as dipped, some of the radium solution and when the solvent of this solution is evaporated, there will remain an

exceedingly thin film of radium producing thereby almost all surface action. However, in this form it would not have been possible to use the radium, as same would have been readily subject to mechanical destruction or dissolution when brought in contact with the fluids of the body, etc.; therefore, it was necessary to surround this radium film with a protective coating. This, however, was no easy matter for if a protective coating was made too strong, we would have had the same disadvantage as in the radium tube, that is, inability to use the alpha rays and emanations, therefore the coating had to be prepared so as to be strong enough to withstand ordinary use such as friction, etc., and to protect the underlying radium film from destruction by fluids, etc. On the other hand, the protective coating had to be thin enough to permit the alpha rays as well as the emanations, which will not even penetrate tissue paper, to penetrate. I finally succeeded in solving this problem by providing the radium film with another film of collodion, which film is prepared so as to be tough enough to withstand ordinary usage, and which, on the other hand, is thin enough to permit the alpha rays and emanations to penetrate.

If we now insert an instrument, rod, disc, or whatever the case may be, just coated with radium and suitably protected, into a wound, etc., the alpha rays as well as the beta and gamma rays can act upon this and furthermore the emanations will penetrate and provide the walls of the wound with which they come in contact with the radio-active deposit as described before, which in turn will undergo the various changes, all as indicated before.

That the alpha rays are able to penetrate the coatings may be readily proved by holding a so-coated rod or disc, etc., upon a zinc sulphide (sidotblende) screen. If you then observe the so-produced fluorescence upon the screen with a good magnifying glass, you will see a large quantity of scintillations, which has been so beautifully demonstrated by the spinthariscopes of Sir Crookes. These scintillations are produced by the bombardment or striking of the alpha particles upon the zinc sulphide.

That the emanations penetrate the coating can readily be proved by either placing such coated rods, etc., in a glass tube and then blowing air over same but still better by blowing air through a tube which has been coated on its inside with radium and protected with a suitable coating, and then allowing this air which passes through the tube to strike the electroscope. It is a well-known fact that the gaseous emanations will fol-

low the air current, and as the emanations as well as radiations ionize the air, that is, make the air a good conductor for electricity, this air, which has passed through the tube and is laden with emanations, will discharge the electroscope.

AUTHOR'S ABSTRACT.

Meeting of Medical Section, March 12, 1906.
Dr. B. R. Shurly presented the paper: **"The Treatment of Pre-tuberculous Conditions, with a Consideration of the Hypodermic Method in Associated Anaemia."**

The pretubercular stage of phthisis is in the vast majority of cases nothing more than an unrecognized tuberculosis, and there is no tuberculosis without tubercle bacilli. The signs which indicate the probable approach of demonstrable tuberculosis are (1) progressive loss of weight with asthenia; the ratio of height in feet and decimal fraction to weight in pounds is normally 26 for men, and 23 for women; 21 is abnormally thin. (2) The average between the circumferences of the chest (men, at level of nipples, women, at ensiform) upon forced inspiration and upon forced expiration; this constitutes the so-called thoracic perimeter, and should never be less than half the height, (3) Vital capacity, which for men should not be less than 3 cu. in. for each inch of height, and 2.6 cu. in. for women. (4) Lymphatism, or general hypertrophy of lymphoid tissue, as the tonsils, lymphatic nodes, etc. (5) Persistent indigestion. (6) Chloro-anaemia. (7) Lowered pressure and rapid pulse as studied by pressure apparatus.

This condition of lowered resistance has been successfully combatted by daily hypodermic injection, deep into the muscles of buttock or back, of .05 to .1 of a grain of the green ammonio-citrate of iron, and .001 to .002 of a grain of the arseniate of soda, according to indications. The treatment should be started with the smaller doses. The medication is dispensed in aseptic individual doses contained in glass pearls, ready to be transferred into the syringe.

"In conclusion, it is evident that no one or two signs can be relied upon as conclusive proof of an approaching phthisis. Yet taken altogether, we are given enough danger signals to warn us. Active measures may be enforced at this stage with the best results. If the strenuous fight against the ravages of tuberculosis was advanced to the pretuberculous stage, the stage of lowered resistance, consumption would not attain its high mortality. Hypodermic medication with iron, ar-

senic, hypophosphites, and strychnine offers a prompt and powerful reconstructive adjunct to the "necessary pure air, good food, and sensible hygiene."

Dr. W. S. Anderson: Early recognition of commencing tuberculosis will make treatment correspondingly more effective. Hypodermic medication is as much more definite than medication per orem as surgery is more definite than medicine. The tuberculin reaction would perhaps be a help in making early diagnosis.

Dr. C. D. Aaron: All forms of iron introduced as medicine into the stomach are changed into the chloride; it is not absorbed, but protects the natural iron in combination with nucleo-albumin from the action of the sulphates. One advantage of the hyperdermic method is seeing the patient every day, and being thus enabled to adapt the day's treatment to the day's need.

Dr. E. L. Shurly: Recommended hypodermic medication as definite, prompt, and effectual. Copper sulphate, phenol, and iodine can be used by hypodermically in indicated cases, with extraordinary results.

Dr. W. M. Donald: Has found the injections painful, and thought same results could be accomplished by oral medication. The difficulty with radiographs of the chest for diagnostic aid is the need for expert interpretation of the radiographs.

Dr. J. W. Vaughan: Inorganic iron introduced directly into the tissues, acts as a local poison, and is absorbed only after it has changed from its inorganic state, at the sacrifice of the adjacent cells.

Dr. Shurly: In reference to the difficulty with radiographs, the practical and safe use of any instrument of precision depends upon knowledge of, and familiarity with, the instrument in question. Hyperdermic method not painful when rightly used. Not expensive, even the Italian capsules costing only seven cents apiece. No abscess in over 500 injections.

General Meeting, March 19, 1906. **Dr. Paul Thorndike,** Boston, presented the paper: **The Surgery of the Prostate."**

Meeting of Surgical Section, March 26, 1906.

Dr. P. D. White presented, with demonstration, a paper: **"A Modified Phorometer."**

The instrument presents no original tests but a combination of many in compact, convenient, and practical form. Was made for personal use, and as a time saver.

Discussion of good points and limitations of, Stevens, Wilson, and Savage phorometers, and "Latest Optimeter."

While using instrument: Vision of one eye undisturbed, special head rest to keep eyes close to lenses, use of trial frame largely obviated, adjustment accomplished by special bracket, instrument levelled by two screws and spirit level.

From behind forward, the instrument presents—two fixed and two revolving cells, two swinging revolving cells, two instantly movable prism holders (pupillary adjustment for all the above), two rotary prisms in special cells, giving total of 10 and 30 degrees respectively. By means of rack and pinion arrangement, either rotary may be moved before either eye and as far back as back uprights. This is the distinctive feature.

Three positions of instrument enable one to tell the balance (asthenic or sthenic) of the recti and obliques and duction power of all these muscles. (Author's abstract.)

Dr. G. H. McFall presented a paper: **"Neuralgia Due to Sinus Disease."** The author referred to the large proportion of persistent cranial neuralgias and headaches caused by inflammation of one or another of the accessory sinuses of the nose. The pain is a pressure symptom, and the treatment is drainage, either by removal of obstruction in the way of natural drainage, as a deflected septum or an hypertrophied turbinate, or by artificial opening into the sinus. Radiography and transillumination are important aids in differential diagnosis.

Dr. B. R. Shurly: Recommends in acute cases the favoring of drainage by reduction of congestion of middle turbinate with cocaine and adrenalin. In subacute and chronic cases, remove anterior end of turbinate. Examination of the wash water after puncture will determine the nature of the inflammation.

Dr. W. S. Anderson: In rare instances, nasal obstruction can result from only muco-pus in the antrum. The frontal sinus is so variable that operation upon it from within the nose is dangerous. Recent development of radiography of the sinus will make this operation less uncertain.

Dr. P. M. Hickey: "Neuralgia" usually covers a failure of diagnosis. Pain in a nerve is generally caused by some definite irritation. Radiography as applied to sinus disease, though still in its infancy, gives accurate information regarding the size and shape of the frontal sinus, as well as the thickness of its walls.

Dr. P. D. White: Spoke of the liability to dryness of the nose after resection of the turbinate.

Dr C. S. Oakman: The rather high mortality of operations on the frontal sinuses (7 to 10 per cent) should induce caution in advising radical operation.

Dr. J. E. Gleason: Much of the danger in operating on the sinuses can be avoided by entirely omitting packing. Many cases of chronic sinusitis give no pain; atrophy is often the prominent indication.

Dr. Emil Amberg read a paper: "Ear Affections and Mental Disturbances."

After citing a number of cases, some of them his own, the writer divides the relations of ear affections to mental disturbances, into five classes. They are based, in his opinion, on: (1) Hearing sensation. (2) Exhaustion, local irritation and intoxication. (3) A pathologic mental predisposition. (4) No causative or accessory relation. (5) Accumulation of cerumen and foreign bodies. He reaches the following conclusions: 1. The ear participates in the production of mental disturbances, directly and indirectly. 2. As an organ of sense, its functional disturbance may disharmonize the normal state of thinking. 3. Mental disturbance can be brought about in two ways: By causing hallucinations or illusions, the influence of which is more or less strong according to the predisposition of the afflicted individual. 4. Entirely different from these disturbances are those in which the ear and its surrounding parts are simply the place in which a toxemia, for example, is primarily created, or in which an abscess engages the vitality of the body. 5. Both conditions (3 and 4), while entirely different from each other, clinically and pathologically, can produce mental disturbance or aggravate pre-existing mentally abnormal conditions. 6. It is very probable that, also without a predisposition, a mental disturbance can be created, if, e. g., the annoying subjective noises create a state of exhaustion or neurasthenia in the patient. 7. These conditions are of great import from a forensic point of view and must be considered in declaration of witnesses. 8. We are confronted by the important question whether the consent to an operation is required of an adult patient whose mental ability is temporarily interfered with and who is unable to judge his condition; also whether the consent of the relatives is necessary in such a case. 9. The hearing organs of inmates of asylums should be examined. 10. Patients suffering from mental disturbances who exhibit symptoms on the part of the hearing organ, should be examined not only for pathologic condition of the ear but also of other organs, e. g. of the kidneys, on account

of the fact that the disturbance in the ear, although in itself a nerve center, may be only a reflex disturbance. 11. The benefit of surgical interference in ear affections should be bestowed upon the insane in need of it. (Author's abstract.)

Dr. Minta P. Kemp: Hallucinations of hearing are most distressing to insane patients.

W. E. BLODGETT, M. D.

Michigan Personals

Dr. C. G. Jennings has been elected President of the Detroit Board of Health.

Dr. W. T. Parker, of Fowlerville, after spending a year in Europe, has returned to his home.

Dr. W. J. Herrington, of Bad Axe, has been seriously ill from septicemia.

Dr. G. W. Orr, Lake Linden, has been appointed health officer of the township.

Dr. Harry Miller has moved from Cambria to Hillsville, Mich.

Dr. W. M. Wemp has moved from Otter Lake to Oxford, Mich.

Dr. J. J. Day, of Lake Odessa, has removed to Alma.

Dr. James Eakins has been elected city physician of Alpena.

Dr. E. K. Herdman has been re-elected city physician of Ann Arbor.

Dr. H. R. Niles has been appointed steward of the Michigan School for the Deaf at Flint.

Dr. G. P. Sackrider, of Henderson, and Miss Nora Blackmore, of Leslie, were married April 18th.

Dr. G. W. Jones has been elected health officer of Imlay City.

Dr. F. W. Stewart has been made health officer and Dr. de Somoskeoy, city physician of Coldwater.

During Dr. C. B. G. de Nacrede's absence in Europe, Dr. W. H. Hutchings, formerly assistant in surgery at Ann Arbor, but now of Detroit, will be Lecturer on Surgery at the Dartmouth Medical School.

Dr. E. R. Campbell and Miss Margaret Pitt Durant, both of Flint, were married April 18th.

Deaths

Dr. O. F. Burroughs, a graduate of the State University in 1869, a practitioner in Galesburg for nearly 50 years, died at his home April 14, aged 76 years.

Dr. E. De Spelder, Second Vice-President of the Ottawa County Society, died of meningitis at his home in Zeeland, April 11th. The deceased was a graduate of the University of Michigan and was held in high esteem by his colleagues in Western Michigan. The members of the Ottawa County Medical Society attended the funeral in a body.

A hematoma may be produced in the calf muscles by direct or indirect violence that the patient may pay little attention to at the time or even fail to recall.

SURGICAL SUGGESTIONS.

Swelling of the leg, associated with febrile disturbances, may be produced by hematogenous infection of a hematoma of the calf muscles. Such a condition may somewhat simulate osteomyelitis or other serious condition. It may be differentiated, however, by the location of the greatest tenderness and swelling and by a careful inquiry into the history. If no distinct traumatism is recalled the condition of the patient's arteries may nevertheless suggest the possibility of the occurrence of such a hematoma.

Persistent pains in the leg may be due to obliterating endarteritis. This occurs occasionally even in young men and often goes on the production of gangrene. Both syphilis and excessive smoking are suspected as etiological factors.

Flat-foot is another cause of pains in the leg or thigh.

Wet dressings, especially the very useful Burrow's solution of aluminum acetate, when applied to the hand or foot, usually cause maceration and whitening of the skin, which is apt to alarm the patient. The addition to the solution of one-fourth its bulk of glycerin or alcohol, will obviate this unsightly maceration.

If within a week or two after the performance of gastrostomy the drainage tube should be expelled from the fistula, do not entrust its re-introduction to inexperienced hands. It has sometimes happened that the tube has been pushed into the peritoneal cavity, instead of into the stomach.

Bandage knives cut best when they have a "saw edge," which is easily secured by sharpening them on a window sill or other rough stone.

Carcinoma of the cervix may remain hidden in the lumen of the cervical canal, which is then eroded and forms an irregular elliptical cavity. While the external os is closed suspicion of the serious condition present will be attracted by the foul or bloody discharge.

When the openings of the Bartholinian glands appear as two sharply defined red spots, an antecedent inflammation may be diagnosed with certainty, and in a great majority of instances a latent gonorrhea is present.

In cases of hematocolpos and hematometra it is essential to precede all interference by a careful rectal examination in order to determine whether the tubes are distended or not. If hematosalpinx exists a laparotomy and salpingectomy must precede the vaginal operation, otherwise a severe peritonitis may be set up by a reflex discharge of infective secretion from the tubes.

No operation for sterility in the female should be performed without first excluding sterility on the husband's part.

Do not be too hasty in resecting a strangulated loop of intestine. It is remarkable how frequently such loops become viable after long continued applications of hot saline solution.

If a peculiar looking mass is found at the inner side of the ring in the course of an operation for inguinal hernia, do not incise or dissect it before convincing yourself that it is not the bladder.

All cases of hernia in which there is a history of frequent urination should lead one to the suspicion that the hernial sac contains part of the bladder.—*Am. Jour. Surg.*

Progress of Medical Science

MEDICINE.

Conducted by

H. S. OLNEY, M. D.

The Relationship Between Heart and Gastro-Intestinal Disturbances.—SCHMIDT directs attention to the fact that apparent gastro-intestinal trouble is not infrequently an indication of faulty circulation resulting from weakened cardiac activity. Patients consult the physician on account of stomach trouble, complaining of painful sensations in the region of the stomach and intestines, gaseous eructations and the passage of a large amount of flatus. On examination the only objective symptom to be observed is a marked distention of the stomach and small intestines with gas. The stasis of the venous blood in the vessels of the stomach and of the intestines resulting from the weakened cardiac action leads to a decrease in the absorption of gas from the intestinal canal through the blood and lymph vessels. The large amount of gas contained within the gastro-intestinal tract is not due to an overproduction as a result of intestinal putrefaction but results from a decrease in the absorption of the gases normally present. Again wherever we have prolonged stasis and consequent engorgement of mucous membranes with blood we invariably find an associated catarrhal condition. Thus in insufficiency of the heart action with venous stasis in the vessels of the stomach and intestines, the development of a more or less general gastro-enteritis will ultimately take place. The symptoms arising on the part of the heart as a result of primary gastric disturbance have been divided into (1) Tachycardia, (2) Pseudo angina pectoris and (3) the so called dyspeptic asthma. The author claims that no sharp line of differentiation can be drawn between these various conditions inasmuch as attacks of dyspeptic asthma and anginal pain may replace each other in the same individual. The cause of the development of the associated heart symptoms is undoubtedly reflex irritation. These reflex disturbances of the heart occurring in connection with gastro-intestinal conditions never develop unless the heart itself is affected with some functional or organic disease. Reflex disturbances from the gastro-intestinal tract do not occur in normal hearts. The prognosis as to the ultimate outcome is favorable in the case of reflex disturbances associated with cardiac neuroses. When, however, the heart trouble is organic, a gastro-intestinal condition may, through reflex action, damage the capability of the heart beyond repair.—*Berliner klin. Wochens.*, No. 14, 1906.

The Significance of Premenstrual Elevations of Temperature.—RIEBOLD studied the premenstrual temperature curve in 2,000 cases. He con-

siders as premenstrual fever those cases in which a rise of at least .5° C. over the maximum daily temperature occurred on one of the three days immediately preceding or on the first day of the menstrual period. Premenstrual fever was found (1) Accompanying the first or second period following convalescence from the acute infectious fevers. (2) In cases of recent recovery from acute tonsillitis and in cases of enlarged tonsils. (3) With diseased conditions of the genitalia, salpingitis, endometritis. (4) Accompanying dysmenorrhea and chronic constipation (auto-intoxication). (5) In diseases of the nervous system. (6) In tuberculosis. The temperature curve in normal women shows a distinct premenstrual rise followed by a decline during the menstrual period. However the premenstrual rise in normal individuals never rises above the normal maximum temperature. The explanation of the premenstrual rise in temperature is found in the fact that at this time there is a distinct increase in metabolic processes of the body. The increase in metabolism is evidenced not only by a rise in body temperature but also by a coincident increase in the frequency of the pulse, a rise in blood pressure, increase in the lung capacity and an increased output of urea.

Riebold studied 70 cases of pulmonary tuberculosis in 39 of which he was able to demonstrate the presence of premenstrual fever, which was present in initial cases as well as in those in which the lesions were well advanced. The premenstrual fever occurring in connection with pathologic conditions of the lungs is in the majority of cases an intoxication fever due to the absorption of toxic substances from old foci of disease. Occasionally the rise in temperature may indicate an active advance in the disease process occurring immediately before menstruation. Thus in tuberculous individuals high premenstrual fever not infrequently indicates a beginning pleurisy. Tuberculous pleurisies show a tendency to develop shortly before or at the commencement of a period. The premenstrual fever which follows the infectious diseases is an indication that infectious foci still exist, usually situated within the lymphatic glands. Thus following acute rheumatic fever premenstrual fever is of significance as indicating that infectious foci still exist and relapses may occur. The premenstrual fever associated with constipation is explained as an intoxication fever resulting from the absorption of toxic material from the intestinal canal. RIEBOLD arrives at the following conclusion: Premenstrual fever is most frequently due to the absorption of toxic products from old or latent foci of disease. It may, however, indicate an active advance of the disease process. It is frequently, but by no means always present, in tuberculous individuals. Premenstrual fever is never observed in women who are in perfect health.—*Deutsche med. Wochen.*, Nos. 11 and 12, 1906.

SURGERY.

Conducted by

MAX BALLIN, M. D.

Myelomatosis, Leukaemia and Hodgkin's Disease.—Myelomatosis is the appearance of multiple myeloid tumors. These tumors originate from cells of the bone marrow, and do not show the same structure as the maternal tissue. They are always multiple in different bones, but form metastatic processes in internal organs, only exceptionally. Leukaemia is a disease of the blood characterized by increase of certain groups of leucocytes and increase of the lymph-adenoid tissues. These tumors of the lymphatic organs, glands, bone-marrow, etc., are of the same type as the maternal tissue, simple hyperplasias. The probable cause of leukaemia is a toxin—Lympho-spleen or Myelo-toxin (Flexner). According to the presence of lympho, spleno or myelotoxin, we get lymphatic, splenic or myeloid leukaemia. The hyperplasia of the lymphatic and myeloid organs in leukaemia are the consequence of compensation respectively and formation of antitoxin in these organs. Pseudoleukaemia shows the histologic picture of leukaemia with lymphocytosis. Hodgkin's disease is characterized by *inflammatory* hyperplastic formation in the lymphatic tissues. The original structure of the lymphatic organs is changed by large increase of round cells and formation of connective tissue. The blood does not show any changes in Hodgkin's disease.—R. Hoffmann, M. D., *Archiv. fuer klinische Chirurgie*.—Vol. 79, Part 8.

Massage of the Heart Especially in Chloroform Syncope.—The direct rhythmic massage of the heart has been done through three different incisions. (1) By the sterno-costal route; then an incision in the intercostal interspace; (2) by abdominal trans-diaphragmatic route, after opening the abdomen, the heart is reached directly through an incision in the diaphragm; (3) the abdominal sub-diaphragmatic route. The heart is compressed through a median laparotomy, without incising the diaphragm. The third route is the one most highly recommended and especially good when the heart collapse occurs during a laparotomy. The diaphragm is always relaxed during a syncope, so that the heart can be easily compressed by the hand being introduced into the abdomen, the other hand making counterpressure from the precordial region. The author has gathered from the literature the following cases: The sterno-costal was chosen sixteen times; in 12 cases the patient died, 3 were revived tem-

porarily, one permanently. The trans-diaphragmatic route—that is *with* incision of the diaphragm—was employed only 3 times, without any permanent result. The sub-diaphragmatic method (without opening the diaphragm) was chosen 5 times, with one death, one temporary revival and 3 permanent results. Direct electric irritation of the exposed heart is not only useless but even dangerous and should not be used. In case of heart-syncope the direct rhythmic compression of the heart about 30 or 40 times in a minute through an abdominal incision is to be recommended.—Chas. Lenormant, M. D.—*Revue de Chirurgie*, March, 1906.

The Differential Leucocyte Count.—The differential blood-count and its relation to the total leucocytosis is today the most valuable diagnostic and prognostic aid in acute surgical diseases that is furnished by any of the methods of blood examination. It is of value chiefly in indicating fairly consistently the existence of suppuration or gangrene, as evidenced by an increase of the polynuclear cells, disproportionately high as compared to the total leucocytosis. The greater the disproportion the surer are the findings, and in extreme disproportions the method has proved itself practically infallible. As the relative disproportion between the leucocytosis and the percentage of polynuclear cells is of so much more value than the findings based on a leucocyte count alone, this latter method should be abandoned in favor of the newer and more reliable procedure. The negative findings showing no relative increase or even an actual decrease of the proportion of the polynuclear cells while of less value, shows with rare exceptions the absence of the severer forms of inflammation. In its practical applications, the method is of more frequent value in the interpretation of the severity of the lesions of appendicitis and their sequelae.—Charles Langdon Gibson, M. D., *Annals of Surgery*, April, 1906.

Arterial Anastomosis by Invagination.—BROUGHAN reports a successful suture of the axillary artery after Murphy's invagination method. A negro, 39 years old, was stabbed in the axillary space. A large baggy mass filled the whole right axilla, the wound being blocked by a protruding clot. The right arm was cold and pulseless. The axillary vessels were exposed and both axillary vein and artery were found almost severed. The ends of the vein were ligated. The artery was temporarily compressed by digital pressure and sutured. The ends—after being entirely severed—were freed from the sheath for about half an inch. The proximal end of the artery was invaginated in the distal, by means of three fine silk-sutures. Five additional sutures fastened the overlapping edge of the distal part to the adventitia of the proximal end. Uneventful recovery. Radial pulse returned within 12 hours.—*Surgery, Gynecology and Obstetrics*, April, 1906.

GYNECOLOGY AND OBSTETRICS.

Conducted by

REUBEN PETERSON, M. D.

Uterine Myomata and Malignant Disease.—T. S. CULLEN, Baltimore, calls attention to the danger of incomplete examinations after hysteromyomectomy as regards the possible existence of malignant disease. He has been surprised to find how frequently myoma is associated with carcinoma in the large experience at the Johns Hopkins Hospital, and in 1903 he advised opening the uterus immediately on its removal to ascertain whether or not any chance carcinoma of the uterine body existed, and he now recommends not only the careful examination of the uterine cavity, but also of the myomatous nodules. As an illustration of this, he reports a case of supravaginal hysterectomy supposedly for simple interstitial and subperitoneal myomata. Two years later sudden collapse occurred due to hemorrhage from sarcoma of the cervical stump. Re-examination of the original tumor showed typical sarcomatous changes of the myoma. The patient died eight months after the progress of the growth had necessitated an operation for obstruction of the bowels. The case, he says, clearly indicates that physicians should examine carefully, not only the uterine cavity but also the myomata before the cervical stump is closed.—*J. A. M. A.*, March 10, 1906.

Early Diagnosis and Treatment of Puerperal Septic Diseases.—S. MARX declares that puerperal infection depends upon infection from without, gaining its entrance practically always by lesions in the vagino-uterine route. These, like infective areas in other parts of the body, should be discovered and attacked energetically and wisely. The writer has maintained for years that practically all sepsis arising after labor gains its entrance from the so-called puerperal ulcers, whether they be situated at the vaginal outlet, their most frequent site, or upon or within the cervix. Early recognition and treatment will cut short many a case of beginning sepsis that would otherwise develop into a dangerous and prolonged illness. All elevations of temperature, or an abnormally high pulse rate, with or without fever, in the period of the puerperium, should be considered with suspicion. Every case of this kind should be looked upon as one of sepsis, until the diagnosis can be absolutely made. A complete and thorough physical examination must always be made before the local one, except in those cases in which there is no question that sepsis is the one and only condition present. In the

case of evident ulcerative areas, which are limited to the lower genital tract, the interior of the uterus should under no condition be invaded by hand or instrument. Carbolic acid, in pure form, is the cauterant of choice because of its painlessness, its deep influence, and the ability to control its action with alcohol. In the case only of intra-uterine sapremia is the exploration for retained products of conception justified.—*Medical Record*, April 28, 1906.

Intraligamentous Drainage for Non-Suppurating Parametritis, With Description of Technique.—GARRIGUES describes his method of operating as follows: After curetting the uterus, the cervix is drawn toward the healthy side, and a bullet forceps is inserted in the vagina to the side, and slightly posterior to the cervix, so as to put the vagina on the stretch. An incision, about three-fourths of an inch in length, is made through the vaginal wall, close to the uterus. The forefinger is inserted, and, keeping close to the uterus, is pushed well up between the layers of the ligament into the hard parametrium, and then outward, so as to open up the mass freely for drainage. Should the Fallopian tube be much swollen it is opened by means of a blunt forceps under the guidance of the index finger. A good-sized tube is introduced, either into the parametrium or into the tube, as the case may be, and the operation is complete. If no pus is present a small quantity of bloody serous fluid escapes. The writer has never had to use an artery forceps, and has had no deaths following this operation.—*Medical Record*, April 7, 1906.

Vaginal Section in Relation to Puerperal Sepsis.—PRICE advocates treating puerperal sepsis by walling off the uterus from the neighboring lymphatics through a posterior section by a liberal packing of iodoform gauze. The writer emphasizes as the essential point a liberal length of incision, as it is important to have abundant room for a goodly amount of gauze packing. During recent years he has operated in streptococcic infection, also in those clearly not streptococcic, but localized peritonitis with its plastic exudates around the adnexa. The results of this treatment have been most gratifying. Before the vaginal section is made, the uterus is irrigated with a mild antiseptic, preferably bichloride of mercury; a liberal application of equal parts of iodine and carbolic acid is made, and the uterine toilet is completed by a packing with iodoform gauze. By this treatment the pathogenic germs are destroyed by the liberation of iodine in their presence, and the many inflammatory lesions subsequent to puerperal sepsis if they have just begun are cut short, or if they have existed for some time, the condition is remedied.—*Medical Record*, March 10, 1906.

PATHOLOGY AND BACTERIOLOGY

Conducted by

A. P. OHLMACHER, M. D.

Experimental Studies Upon Fatal Burns.—

Exactly how death is caused by excessive heat is not yet determined, although much attention has been directed to the subject. It is particularly difficult to find a satisfactory explanation of the mode by which fatal consequences result from extensive superficial burns or scalds of the skin. Laying aside the theory of shock and of neuro-pathic insult, the more recent views concern the changes wrought in the blood by the thermic exposure and two views are entertained. One holds that blood elements are disintegrated and destroyed in the burned area, and finding their way into the general blood stream impede circulation, induce thrombosis and finally cause death through mechanical interference. The other theory is that poisonous substances set free by the burned blood produce damage of organs and tissues, and death.

The problem has been recently attacked anew by EIKMAN and VAN HOOGENHUYZE, who used rabbits and resorted to various procedures, including the classic one of scalding the ears. Their conclusions are as follows:

1. By an extensive acute scalding of the skin or by a burning, where a part of the body has been exposed for a long time to the effects of heat, death can supervene, in consequence of paralysis of the heart, through overheating of the blood.

2. The changes in the blood, especially the great decrease in the number of red blood corpuscles and the disintegration of the same into particles with the appearance of hemaglobin in the urine, appear in some cases of burning without a fatal result; but are in other cases not demonstrable, although here death speedily occurs. They cannot, therefore, be regarded as the most frequent event or the most important cause of death.

3. Under the influence of heat the skin undergoes such a change that a substance appears therein, which, if received into the blood may cause death; the nature of this substance and how it acts are still undetermined. A total burning extending over a small surface, whereby carbonization sets in, is more easily borne than an extensive one less deep. This is explained by the reason that, in the first case, where the circulation is most impeded, the deleterious substance has less chance to escape.

4. Scalding of muscular tissue develops no such poisonous matter as appears in the skin.—*Virchow's Archiv.* Bd. 183, Heft. 3, 1906.

The Antiendotoxin of Typhoid.—As distinguished from the soluble specific bacterial poisons, or toxines as they are called, is the much larger class of poisonous substances closely incorporated with the bacterial cell and not set free without disintegration of the bacteria—the endotoxins. Of the first group two toxines are well known, those of diphtheria and tetanus. Poisons of the second or endotoxin class are characteristic of the typhoid bacillus, pest bacillus, streptococcus, pneumococcus, gonococcus, cholera spirillum, etc., in fact, for the majority of the pathogenic microbes. When susceptible animals are immunized by endotoxins antibacterial (bacteriolytic) bodies appear in their blood serum, but it has generally been held that no specific antiendotoxic properties manifest themselves. With this conclusion BESREDEKA disagrees on the basis of his more prolonged studies upon typhoid endotoxin. A horse which has for two years been subjected to intravenous injections of typhoid cultures, first killed and later living, has furnished the serum tested by this observer. It was found not only to possess the usual antibacterial properties (agglutinative, bacteriolytic) but further to neutralize the typhoidal endotoxin. To determine this antiendotoxic property guinea pigs were taken as test animals. With both dried typhoid cultures (dried endotoxin) and liquid endotoxin the minimal fatal intraperitoneal dose was obtained. Normal horse serum in sufficiently large amount neutralized twice the fatal dose, never more. On the other hand the serum of the immune horse neutralized 5 to 12 fatal doses of dried endotoxin and in much smaller amount than was employed of the normal serum. Against the liquid endotoxin the special serum proved even more active in its specific endotoxic action, nullifying 32 fatal doses. BESREDEKA does not think that he has by any means reached the limit of antiendotoxic production; and by more prolonged and more active immunization of the horse, and perhaps by a purification of the endotoxin, he hopes to achieve still more satisfactory results. A further suggestive point concerns the protective action of the antiendotoxic serum administered some hours before the test dose of endotoxin, and injected simultaneously; and the curative action of the serum when following after two hours, the injection of the fatal dose of typhoid poison.—*Annales de l'Institut Pasteur*, T XX., No. 2, 1906.

PHARMACOLOGY AND THERAPEUTICS.

Conducted by

C. W. EDMUNDS, M. D.

Treatment of Exophthalmic Goitre.—DOCK used thyroid in the treatment of nine cases, giving 5 grains three times daily. One case showed a lessening in the size of the goitre while in the others practically no change was obtained. The pulse rate was decreased in 3 and increased in 2 cases. Diarrhea, nervousness, etc., were increased in 2 cases, while in the other 7 there was a subjective feeling of benefit.

Thyroidectin was used in 7 cases and did not seem to exert any influence over the course of the disease.

Iodothyryn and thymus extract, each used in 2 cases, gave no obvious effects. Suprarenal extract proved of no use.

Röntgen rays were used in 2 cases, with no other results than might have been obtained by any other method of treatment.

For purely symptomatic treatment, DOCK advises rest, diet, care of stomach, intestines and skin, with special reference to symptoms from heat and nervous systems. For tachycardia, rest is of first importance, together with the use of the ice bag.

Strophanthus is usually better for this condition than digitalis, and it may be combined with strychnine.

For nervousness and sleeplessness, rest, fresh air, a cool bedroom and a comfortable bed are of great importance. Hypnotics and opiates are to be avoided if possible. For constipation sodium phosphate may be used, but is probably not better than cascara.—*Am. Medicine*, V. XI., p. 217.

Aspiration in Acute Articular Rheumatism.

—CORDEIRO reports some of his results in the treatment of this disease by aspiration of the affected joints, whenever there is enough fluid present to warrant such treatment. He finds the pain and tenderness disappear at once, the temperature falling and the general course of the disease being shortened. In the cases treated by him in this manner the aspirated joint has never been re-attacked during the same or subsequent illnesses. Whether these good after-results will continue or not will take many more observations to decide.—*Am. Jour. Med. Sc.*, V. 13, p. 529.

Pilocarpine in Chronic Renal Disease.—

WEST considers pilocarpine the most useful drug in the treatment of chronic renal disease. He has used it very largely and has never seen any

disadvantage follow its administration. On the contrary, nothing but good. Headache and restlessness, which are so common in the latest stages of the disease, are relieved more quickly and persistently than by any other means and threatened uremia staved off. He gives it by the mouth, in 1/6 grain doses, two or three times daily, or subcutaneously in 1/12 grain doses. This amount does not produce profuse sweating or any unpleasant symptoms, merely a gentle action of the skin.—*Lancet*, Vol. 170, p. 1028, April 14, 1906.

Poisoning Due to Belladonna Plasters.—

DOLAND reports three cases of poisoning due to the use of belladonna plasters. The first case was of a man 47 years old, who had been wearing two plasters for several days and on the day of admission to the hospital two more had been applied after the skin had been rubbed with a coarse towel. The symptoms were those typical of belladonna poisoning.

The second case reported was due to two plasters which had been in place several days.

The third case was in a woman who had been treated by the application of a plaster to the chest. In two hours she showed signs of intoxication.

All the cases recovered comparatively quickly after the removal of the source of poisoning.—*Am. Jour. Med. Sc.*, V. 131, p. 623.

Creosote in Pneumonia.—BEVERLY ROBINSON believes creosote is the most useful single agent in the treatment of pneumonia, not only being curative but also preventive. He recommends that it should be given by inhalation, placing some on water which is kept boiling in the patient's room. It lessens the cough and bronchial irritation in a remarkable manner. It may be administered by the mouth, but given by inhalation, any possible irritation of the stomach is avoided. He believes also that the vapors of this antiseptic drug in the room lessen the likelihood of the disease being contracted by the nurse.

In the later stages of the disease, he advises the use of coca as being a cardiac stimulant superior to the other drugs usually advised for this purpose. The great difficulty is that it is very hard to get a good preparation, one that does not contain a large amount of cocaine (which he does not advise), but which does contain other derivatives most valuable in cardiac exhaustion.—*Medical Record*, Vol. 69, p. 529.

PEDIATRICS

Conducted by

R. S. ROWLAND, M. D.

Symposium on Rheumatism in Children was the subject for discussion, in the Section on Pediatrics, at the recent state meeting of the New York Academy of Medicine. The report is of special moment because it contains the expression of the opinion of such men as Holt, Koplik, Winters, Chapin, Gilman Thompson, Walsh and others.

Holt said he had seen rheumatism in an infant, under one year. He had several times known of cases of multiple arthritis from gonorrheal infection regarded as rheumatism for several weeks. Many of the inflammations of the joints, in very young children, were due to pyogenic organisms. This immunity of infants to rheumatism Holt believes due to something pertaining to the diet, or the surroundings of the child. As soon as a child reached an age when exposure to cold or dampness occurred, rheumatic symptoms were frequently seen. These conditions increased with the age of the child. He thought exposure had much to do with the occurrence of rheumatism. Koplik expressed his opinion that the variety of rheumatism seen in infancy was not so much due to the diet as to the fact that certain avenues of infection were absent in infants, which were developed in later life.

Crandall emphasized that one of the most characteristic features of rheumatism in children is the fact that the symptoms are usually not massed together as in adults, but are isolated and distributed over years so that, as Cheadle has aptly said, "The history of a rheumatism may be the history of a whole childhood." The term rheumatic child, therefore, has a peculiar and distinctive significance. Any child who has once clearly exhibited any of the symptoms of the rheumatic series should be considered as a rheumatic child and prophylactic management should be instituted. We do not do our full duty, if we content ourselves with simply treating the various symptoms as they arise.

Crandall discusses the prevention of rheumatism under six headings: clothing, exercise, hygiene, climate, diet and prophylactic medication. The rheumatic child should wear flannel at all seasons; he should have the limit of outdoor exercise, but, remembering that he is more susceptible to cold and wet, cold and wet feet should be especially avoided. Tepid and cool baths should be given

more regularly than to the normal child. Cool bathing, vigorous friction of the skin, and warm clothing are three measures not to be neglected. As a prophylactic measure proper care of the throat and removal of adenoid growths and enlarged tonsils must be strongly commended. Still another measure of importance is instruction of the parent that no attack of illness is unimportant in a child of rheumatic tendency. The climate adapted for rheumatic patients is one that is dry and warm, with a sandy soil and plenty of sunlight, and free from sudden and radical changes. Maintaining the nutrition by judicious feeding and exercise and the administration of cod-liver oil and iron are important features in prevention.

Gilman Thompson concluded his remarks on dietetic treatment of rheumatism with the following statement: This disease is no exception to the fundamental proposition that, as there is no food or single class of foods which is curative of disease, there is likewise none which is causative of disease. Rheumatism can no longer be regarded as a "dietetic disease" and its dietetic management in childhood should not differ essentially from the established principles of feeding during the critical period of growth and physiologic development.

Holt said that two years ago, while in London, he was struck with the very large doses of salicylates that were given rheumatic children in some hospitals. Several cases of rheumatism he saw treated there with 20 grains of the salicylate every two hours, half an ounce being given in twenty-four hours. He personally found it advantageous to use much larger doses than were usually employed in this country, although he had not had the courage to give those mentioned.

Walsh said as for the claim that the salicylates are a specific in rheumatism, anyone who has seen exactly the same results as are produced by these remedies result from the use of any of the other coal tar products, such as phenacetin or antipyrin, will not yield much to this idea. The salicylates lessen pain and quiet restlessness and thus save the heart. This is the main thing to do in rheumatism, for rheumatism does not kill directly, but produces lingering death through cardiac disease. If the salicylates were specific, then, like quinine in malaria, they would cure every case, but it is universally admitted that they do not.—*Archives of Pediatrics*, Jan., '06.

DERMATOLOGY AND SYPHILIS.

Conducted by

A. P. BIDDLE, M. D.

Chronic Ulcers.—Under this title, HEIMANN considers ulcers of the leg, both acute and chronic. An ulcer is the molecular death of the superficial soft structures, differing clinically from necrosis, caries and gangrene. They are always due to infection of the pyogenic variety. Ulcers may be termed "half sections of abscesses."

Ulcers of the leg are more prevalent during adolescence and old age. They are evenly distributed between males and females, except that those of the varicose type are more frequent in the latter. The different varieties are as numerous as there are authorities. Park's classification is as follows: (1) due to traumatism, (2) due to local conditions, (3) due to general conditions. Da Costa's classification: (1) acute, traumatic, (2) chronic, due to general conditions, (3) tubercular, (4) specific, (5) senile, (6) traumatic.

The treatment of those ulcers which present acute characteristics is as follows:

On first seeing the patient, a mercurial purge, followed by a saline, is indicated. Cleanse the parts thoroughly with peroxide of hydrogen, using means to rid ulcer of sloughs and unhealthy granulations. Follow this by any disinfectant, as permanganate of potash, 1:2,000; bichloride of mercury, 1:1,000; lysol, 1:100; or any the physician may prefer. Caution is necessary in strength of solution used, as one too strong sets up a violent inflammation, which must be fought against. To paint the ulcer with pure carbolic acid or iodine is also advocated by some, but it is best to use diluted solutions for reasons given. After an ulcer is thoroughly cleansed, apply hot fomentations for the first twenty-four or thirty-six hours and change as often as dressings become cold. This rids ulcer of sloughs, etc., and also materially assists in allaying the inflammation and stimulates healthy granulations to sprout. Over this apply a snugly-fitting bandage from toes up to the knees. Canton flannel, rid of its selvedge, is best material for this purpose, as it readily assumes the shape of the leg and supports the blood-vessels better than any material. Insist on the patient staying in bed with the leg in a slightly elevated position, but if this is not possible through entire treatment, at least it ought to be insisted upon for the first few days. Rest, position, and support are often all that is necessary in curing these cases. If

the discharge is offensive, any deodorant is used. Potassium permanganate is the best. Iodoform or its sinergistics is used for this purpose. If the inflammation in the surrounding parts is intense, lead-water and opium or 25 per cent. ichthyol ointment is used. Give tonics and restoratives when needed. Bichloride of mercury and arsenic are the best for this purpose.

As a rule, chronic ulcers are chronic from the start. One should keep the bowels open and treat the constitutional conditions in the usual manner. Insist on rest and elevation. Absolute cleanliness is necessary. Dress antiseptically for a few days, then apply ointments. That consisting of balsam of Peru and oleum ricini is as good as any. This dressing must be changed at least once in 24 hours and the ulcer thoroughly cleansed.

If painful, a nerve is exposed. Several applications of silver nitrate or of stick copper sulphate will stop this pain. It is often necessary to do this under cocaine anesthesia.

Do not use powders early, as they form a crust. Flannel bandages and later those of rubber or rubber stockings are indicated. The latter are especially useful in the varicose variety. When the base of an ulcer is bare and granulations refuse to sprout, scarification is indicated. The incisions must be deep and freely made, which bring a fresh and healthy blood supply to the part. Sometimes it is necessary to repeatedly scarify before an ulcer will heal. Strapping assists in keeping down granulations.

Syphilitic Ulcers.—These include the class set off to themselves. As a rule, they are located in front of the knee, or may be found in the calf or in any position. In some instances the ulcer is part of the secondary eruption; in others, a degenerated gumma from the shaft of the tibia. They are usually crescentic in shape and appear in groups. Under local treatment and the usual constitutional therapeutics they heal readily.

Varicose Ulcers.—Ligate the varicose veins by any of the many methods and treat as a chronic ulcer. A rubber bandage or stocking should be worn after the ulcer has healed. Some advocate incising of the veins, but this is a point in dispute among the authorities.

Senile Ulcers.—Treat as a chronic ulcer. Attempt to build up the system by tonics and hygienic surroundings. In the aged, do not confine in bed.—*Lancet Clinic*, April 24, 1906.

OPHTHALMOLOGY.

Conducted by

W. R. PARKER, M. D.

Some Ophthalmologic Phases of Diseases of the Accessory Sinuses of the Nose.—POSEY, of Philadelphia, has noticed that ocular symptoms, of a type not generally recognized as characteristic, frequently precede the manifestations of sinus disease. "The possibility of the nose or accessory cavities being a cause of eye disease is dismissed in most instances by the surgeon upon the negation of the patient having ever suffered from nasal catarrh, or by the failure of one, or at best, two rhinologic examinations to reveal the presence of pus in the nares." An active sinusitis may exist without nasal discharge, either through retention or from the simple congestive nature of the inflammation, and may cause no subjective nasal disturbances whatsoever. While many forms of eye disease may be occasioned by sinus affections, POSEY has arranged his cases into the following groups:

1. Moderate stasis in the circulation of the optic nerve, as indicated by slight ophthalmoscopic changes and by an interference with vision. In two cases there was a retrobulbar inflammation of the nerve, due to sphenoid sinusitis, in which not only the light sense was diminished, but scotomata were produced. Ophthalmoscopic examination was at first negative, but later pronounced pallor of the temporal half of the disc manifested itself.

2. Conditions occasioned by an involvement of the fifth nerve. Pain, or the sensation of a foreign body in the eye: Herpetic keratitis.

3. Edema of the lids. This may be the early and only ocular symptom of accessory sinus disease.

4. Paresis and actual palsy of the extraocular muscles. The true origin of the paralysis in these cases is often overlooked, and many of them attributed to rheumatism or catching cold, both of these conditions being attended at times by symptoms similar to those provoked by sinusitis.

5. Pseudo-migraine ophthalmoplegique. With variations in the drainage conditions of the affected sinus the symptoms may be irregular or intermittent, so that in cases where one or more branches of the oculomotor nerve have been paralyzed the above rare condition may be simulated. The symptoms are those of ophthalmoplegia more or less complete, associated with violent migraine, nausea, vomiting and fever, lasting a variable period, and recurring at long or short intervals.

6. Pseudo-lacrimal abscess. This is generally

due to a frontal empyema, pointing unusually low down, as a consequence of an anomalous distribution of the cells in that bone; to an empyema of the lacrimal division of the ethmoidal cells, which are at times unusually developed, or, finally, to the burrowing of pus from an abscess of the orbit. Although these accumulations generally point above or below the sac, the differential diagnosis may be extremely difficult, especially in the cases described by Peters. Here there is an ectasia of the sac due to blocking of the exits by pressure of pus in adjacent cavities.—*Jour. Eye, Ear and Throat Diseases*, X, 2.

A New Ocular Symptom in Basedows Disease.—TEILLAIS NARTES says that a dark discoloration of the lids appears simultaneously with the other symptoms of the disease. He claims he observed this symptom at the same time as Jellinck and Rosin, but the latter secured earlier publication.—*Arch. of Ophth.*, Jan., 1906.

Primary Cavernous Sinus Thrombosis.—ZENTWAY and WEISENBURG describe the case of a woman, aged 34 years, with a decided nervous history, who began to have slight exophthalmos and ptosis on the right side probably before the eighth year. These ocular symptoms with additional pain and inflammation of the right eye heralded the approach of the first menstrual period and at each menstruation these symptoms were more severe. Four years after marriage she gave birth to twins, when it was noticed that the exophthalmos was more marked than ever before and that there was ptosis of both eyelids. The ptosis of the left eye soon disappeared. Examination at present shows a marked exophthalmos and almost complete ptosis of the right eye, with marked venous congestion of the eyelid. There is an involvement of all of the cranial nerves of the right side, with the exception of the eighth, and an involvement of the second and third nerves on the left side. The ocular symptoms become more severe at each menstruation. The exophthalmos might have been produced by many causes, but that found with cavernous sinus thrombosis is due to the venous congestion, and it may be that during the menstrual period there is an increase in the amount of congestion. The authors explain the paralysis of the third, fourth and sixth nerves of the right side and of the third nerve of the left side as being due to the pressure exerted by a thrombus in each cavernous sinus. They think the extension of the thrombosis into the superior and inferior petrosal sinuses explains the involvement of the other cranial nerves. They discuss the probable reasons why menstruation and pregnancy affect venous congestion.—*Am. Jour. Med. Sc.*, Feby., 1906.

RADIOGRAPHY AND ACTINOTHERAPY

Conducted by

H. R. VARNEY, M. D.

Roentgen-Rays in Military Surgery—STOKES has described, in a recent article, a few types of wounds that military surgeons are confronted with, and how important the Roentgen Ray has become in military surgery in both the army and the navy.

He estimates that about ninety per cent of the casualties are caused by wounds from shell fragments and splinters in naval warfare.

All of the army hospitals are now completely equipped with X-ray apparatuses. Most of the larger hospitals have an apparatus, modeled according to plans devised by STOKES. It is mounted on a steel truck, with rubber wheels, is easily moved, and can be used in lecture rooms, wards, or laboratories, as occasion demands.

The problem of weight has always been the stumbling block in connection with the portability of these apparatuses, for use during hostilities. Storage batteries gave great satisfaction during the outbreaks in South Africa.

The French have experimented with a radiograph motor wagon which has given some satisfaction and promise for the future.

Two years ago STOKES demonstrated the fact that wireless telegraphy coils may be employed for generating X-rays. He used a tube, multiple spark gaps connecting wires, and a fluoroscope in connection with the wireless telegraphy coils, with most gratifying results.

For the future of army and navy equipment, and for cities in which X-ray facilities do not exist, the reported experiments speak volumes.—*Archives of Physiological Therapy*, January, 1906.

Physical Methods of Treatment in Skin Diseases.—ROCKWELL, after considering older and other methods of treatment in skin diseases, says:

"The X-rays and the actinic rays of light are not only valuable auxiliaries to the older methods in the treatment of benign skin affections, but in malignant cases may supersede them, always supposing that such cases are superficial in character. * * * The principles underlying the use of the x-ray in skin diseases may be found in the power:"

1. To produce atrophy and functional inactivity of the various glandular structures.
2. To stimulate the metabolism of the skin.
3. Its influence on bacteria.

Its influence, therefore, over the functional activity of sebaceous glands renders it of service in acne, acne rosacea, etc., and through this same influence on the sweat glands it does good in hyperidrosis. In stimulating the metabolism of the skin, old inflammations and indurations become resolved and their products absorbed. The beneficial effects following the use of the x-ray in psoriasis eczema and lupus erythematosus may be explained in this way, while its destructive influence over diseased tissue cells, with their low resistance, coupled with the resistive power of healthy tissue cells, accounts for its efficacy in leukemia and superficial epithelioma and tubercular glands. But, after all is said, and whatever the disease, each individual case must be studied by itself and the question of differentiation determined by the practical test of experimental work.

Susceptibilities vary, and there are idiosyncrasies innumerable, and in many cases the personal equation, rather than the name of the disease, must be the determining factor in the selection of the form of treatment best adapted to any given case.—*Am. J. Derm.*, March, 1906.

Results of Light Treatment in Alopecia Areata.

—KROMAYER reports a series of cases of Alopecia Areata, treated by the light. He divides them into two groups; the first, including the less severe cases, involving a smaller area than half the scalp; the second, including those that involved more than half of the scalp, or total alopecias.

The rays used were those of a cold iron light, the exposed part being from 4 to 10 c. m. distance from the electrode. The length of exposures varied from 30 seconds to 10 minutes or more; the number of exposures being dependent upon the reaction of the skin, in each case. Redness, pain, and formation of blister were seen on the day following exposure. Different areas react differently; those which show but slight reaction must have additional exposures. If intense inflammation has been produced, the light exposure must be discontinued until inflammation subsides, then renewed exposures given. A continued reaction should be kept up until new hairs appear.

In the first group there were no failures; and in the second group, 25 per cent were failures.—*Monat f. prakt. Derm.*, July 1, 1905.